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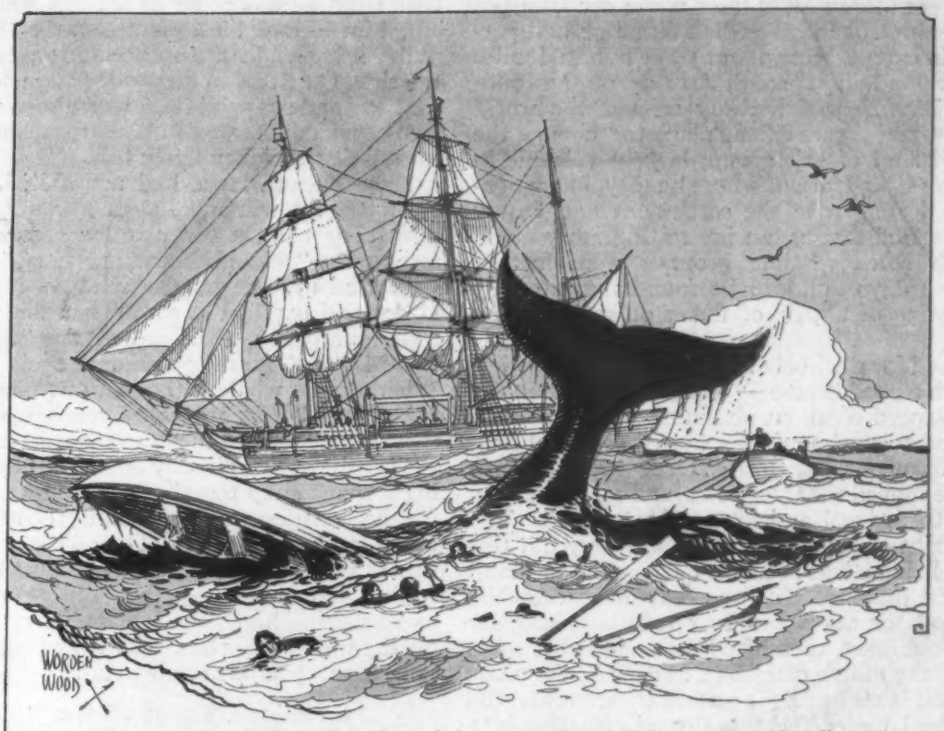

"In an instant the boat shot clear of the commotion, sail down and waif up."

Fighting Sperm Whales

BY CAPTAIN JAMES A. M. EARLE

Formerly Master of the Whaleship "Charles W. Morgan"

AS TOLD TO GEORGE M. SHEAHAN, M.D.

WORSHIP is perhaps not too strong a word to express the feeling that most men and women have for courage. If one has any doubts about it, think of the admiration that is given to gameness in athletic struggles, and its great rewards, practical as well as sentimental. Then there is the thrill of pride that runs through a whole nation when its seamen prove worthy of the best traditions by heroic rescues at sea, as happened more than once during the past winter.

And a mighty good thing it is that this is so, for, after all, gameness is not only a prime winning quality but is (though a tragic one, certainly) the only answer in the face of inevitable defeat. Attempts to change this attitude will always fail, for, as old Hamish said "Men were made before churches were thought of."

I have been asked many times concerning the perils of whaling and the fierce excitement of the "charmed circle," oftentimes by admirers of the man who has become (and deservedly), a sort of patron saint of whaling, namely Herman Melville. Have then, such scenes as he describes ever happened? Does the whale turn upon his human enemies with the malice, spirit and savage temper of an infuriated bulldog, or is he merely a great stupid victim whose revenge, when it does occur, is wholly accidental?

It will be remembered that the cetacean hero of Melville's story is a sperm whale, and therein lies the answer. The sperm is an athletic leviathan, a powerful, heavily muscled, tightly strung and well-knit fellow going directly, solidly and with determination about his business; a heavyweight athlete as it were. His lower jaw is long, strong and practical; his temper, sometimes, is highly irritable.

The right whale, on the contrary, though perhaps as large, is distinguished more by what can best be described as suppleness. So flexible is his great tail on his body that when plunging he appears to whirl it in the air with a flourish, or wriggle and turn it on its axis. In a lateral plane he can, with wonderful rapidity, sweep the flukes literally from ear to ear. His mouth, of course, is without value in offense; his fins he uses against the killer whale, but he never shows fight to boats in the manner of an angry sperm. It is true that many men have been done to death in the right whale fishery, but the causes have been accidental or of a kind inseparable from the industry, like the blind wild plunge of the harpooned whale, the lightning-like flow of the line, or a threshing tail. Furthermore, talk of "killing sleeping whales" is more or less inaccurate, for once he is struck by the harpoon no one can tell what the whale will do.

It was my good fortune (good or bad as you choose to view it) more than once to meet a fighting sperm. Two such encounters remain vivid in my memory, and it seems

to me that in the telling I live them over again. The first occurred in the early 'seventies while I was serving as harpooner of the third mate's boat of the *Rainbow*, off French Rock, and the second (which cost the life of my chief officer) while I was in command of the bark *Charles W. Morgan*, off the coast of Japan.

French Rock, southernmost of the Kermandec Isles, is a barren pinnacle three or four hundred feet high and perhaps two acres in extent, lying about three hundred miles north of New Zealand, in 31° south latitude, on the 180th meridian, and therefore just halfway around the world from Greenwich, and a convenient place to "change the day." Another island of this group, largely volcanic in nature, is Sunday Island, about whose history, in particular the chapter dealing with the settlement and happy life there of the Bell family, an interesting story could be told. French Rock whaling grounds were famous grounds in those days and will be found indicated by the classic drawing of a pair of flukes on many of the old charts.

We had lowered for a school of whales — it was moderate weather with a good breeze — and running free in the whaleboat at a speed of about six knots we came down from behind, and to starboard, of a husky 70-barrel bull. I planted two harpoons in his side, threw my box warp over as the mate shoved the tiller down, and we shot away. I then turned to my sail and let go the halliards. The boat's crew caught the sail and tied it up; they did this while seated, it being a bad breach of discipline to stand up at this critical juncture. The bow oarsman meanwhile had cast off the back stays and I wound them speedily around the 18-foot mast, then lifted the mast, let it come down aft where the officer caught it, and, with the crew, pulled and passed it aft letting it rest on the gunwale, top overside, and heel under the tub thwart. All this in a much shorter time than it takes in the telling. Boatsteerer and officer then changed ends. As the officer went forward to his station the men of the crew took their respective places at their oars — the boatsteerer's oar was almost always carried shipped — making therefore, three oars on the starboard side and two on the port. This was the invariable custom, the starboard being the "three oar side" and the port the "two oar side." We were then ready for further action.

When struck, the whale had dropped his jaw and had rolled over, bringing the under part of his body and his huge mouth and bristling teeth directly towards us. But the momentum of the boat had carried us by, and now he lay aft, to leeward, two-thirds of the length of the box warp, kicking and threshing.

"Pull three, stern two. Lay me on there, Earle!" came the swift order, bringing boat and fish head and head. Most whalemen prefer to lance at about the center of the broadside (bomb also, for that matter, but lower down), so the next order followed rapidly. "Pull ahead all," and as the three oar side ranged along the officer flung first one lance and then another. A lance is made on a somewhat different principle from a harpoon — much the same difference in fact as between the war and hunting arrowheads of the Indians.

The mate seized his lance warp, hauled strongly, succeeded in pulling it out of the monstrous coat, but before he could lay a hand on the lance itself, the whale grabbed it in his mouth and snapped it in two, the two-inch oak pole breaking like a piece of matchwood. In so doing he had turned and we were again parallel and headed in the same direction.

"Pull hard, pull hard there, Bullies," and we circled away from him, the line, of course, still fast but with slack to handle the boat and one turn around the loggerhead for emergency. We intended to come in from behind again, allowing room for a natural sweep of the tail — for we did not like his handling of tail or of his jaw — but as we advanced he turned with us, always facing us.

"Stern all, stern all, and slew the boat around," came the next order. But the whale still turned and faced us. The midship oarsman — I can see him now, and I knew then what he was going to do, too, but I hadn't time to stop him — took his 18-foot oar, the longest in the boat, pulled it back a little distance and gave him a fierce jab in the side. Quick as an angry dog the whale turned, seized that oar and snapped it off well above the blade! He was brave, no doubt at all about that, and considering his huge bulk, a mighty lively fish.

Harpoon and lance had now failed, moreover it was clear that he was more than a match for us. The only remaining chance for capture seemed to be another attempt to "take him head and head" and bomb him as we passed by. The gun was ready — it was an old muzzle loader and handled in much the same way as we handle a shotgun today — the order came "Spring hard, spring hard, Bullies" and the men once again bent to their oars. Whether the whale fathomed our plan or not I do not know, but before we could reach him he rolled again, mouth wide open, and rushed toward us. The officer fired, the bomb passing directly down the huge throat and causing a quick snap together of the jaws. We circled again, for the situation was critical, but the next spout was thick blood, and we closed in. The officer selected his point of attack with care, the lance was thrust in, time and again, feeling and seeking for the "life" — the process known as "pumping him" — until the flurry, when we followed on the outside of the circle, towed about at 20-fathoms length, until the inevitable end.

Catching a Tartar off the Japanese Coast

The middle of the fair weather season nearly thirty years ago — the second week of July to be exact — found the American whaleship *Charles W. Morgan*, then under my command, taking on supplies at Hakodate in the island of Yezzo, one of the few ports of the Island Empire open to foreigners. Besieged at times by gales of almost incredible violence, Hakodate is a fishing town extraordinary, and rarely lacks interest and excitement. At this season, however, quiet reigned, and the scant 48 hours' shore leave was a welcome break for officers and men between the successful seven-months' cruise we had accomplished and an even longer one in prospect. Much had to be done. In addition to the highly essential supply of wood already aboard, fresh vegetables (against the scurvy) and water must be loaded in quantity. But it was all finally attended to; the crew, after the usual excitement and disturbance, rounded up, anchor was weighed and, with topsails, topgallant sails, courses and all fore and aft sails sheeted home, the brave old bark once again began to walk the water like a thing of life.

Out of the harbor entrance, we were bound through the Suva Straits to the east coast of Japan, where a departure would be taken for the Southern Pacific grounds, the old New Zealand right whale grounds hundreds of leagues to the south and the southeast, whose exact center can be indicated as at the intersection of the 37th degree south latitude and the 170th meridian. Our officers and crew were typical and consisted of captain, first, second, third and fourth mates, four boatsteerers, a cook, a steward, two boys, the carpenter, the cooper, engineer (for the donkey engine) and twenty-two men before the mast, each bound to certain duties and occupying the curious and exact position in the social scale of the ship determined by the age-old, ironclad custom of the industry. I call it an industry, for an industry it was, and one whose high positions were reached by no short or easy apprenticeship.

Some detail of these men and their duties will appear in the course of the story.

The first hours of the voyage passed swiftly and without unusual incident, all hands busily occupied with the countless tasks of a deep-water ship. Watches were chosen and set, and the first morning dawned much like the beginning of a clear June day off the New England coast. As the day grew brighter two men could be seen ascending the ratlines on the fore, climbing ever upward until at length they slipped into the hoops of the fore royalmast, where, scanning the watery fields, they swung with the gentle motion of the ship back and forth and from side to side in a sort of circular motion. Though our destination was far away no opportunity for the taking of a whale must be missed. A steady breeze from the land filled the sails; to leeward, miles away, a broad belt of dark blue and drift showed the presence of the Japan current, rolling on its eternal journey from the burning Bay of Bengal to the frozen Aleutian Islands. A few months previous it had been teeming with fur seals on their spring migration, but now it was deserted. Westward rose the mountainous coast of Japan where the tide rolled, then as now, into deep indentations between the heavily wooded hills.

Suddenly, from the masthead, came a long-drawn cry, not unexpected, yet startlingly familiar, but never failing to stir its hearers to wild excitement. Who that has heard that cry can ever forget it? It is like the call of fate itself.

Lookout: "Blows, Blows!"

Officer of the deck: "What do you see, there?"

"The whale turned, seized that oar and snapped it off."

Lookout: "Sperm whale I think, sir." (Note carefully the language of politeness, caution and deference to authority. None must pass final judgment but the autocrat of the ship, nor must the officer of the deck report without getting all possible information.)

"Where away?"

"Off the lee beam, sir."

"How far off?"

"About two miles, sir."

Officer of the deck going to skylight and reporting to captain: "Whale off the lee beam, sir; he calls it a sperm whale!"

I took my long spyglass in hand — it was a trusted companion of many voyages — and ran aloft to have a look at him, my mind the while active with conjectures and details of the coming hunt. From the crosstrees there was no doubt. About two miles to leeward lay a large sperm whale, his broad, gray, glistening back rounding up from the surface, leisurely swimming to the north and spouting his single feathery jet with the amazing clocklike regularity characteristic of these enormous creatures.

"Call all hands, Mr. Mate, and get your boats ready; there is a hundred barrels of good sperm in his overcoat and he wishes it cared for in the *Morgan's* lower hold!"

Followed a pounding and thumping on the forecastle door; a loud shout of "Roll out and go in the boats — sperm whale;" a hustling on of jackets and sea boots; a rush up the steps; a swift trampling of feet on the deck and a seeming confusion that was in reality expedition born of long practice and many drills. In an instant the men were at their stations, the tub oarsman with his canvas hardtack bag and the after oarsman with his cask of water — rations on which the sustenance of the several boats' crews during the hunt would depend. The boatsteerer and the officer of each boat took their places aboard, the former at the bow falls and the latter aft.

"All ready, sir!" sang out the mate.

"Hoist and swing!" came the reply. A swift short pull lifted the boats a trifle, clearing the heavy wooden cranes which were thereupon swung in and hooked behind the bulwarks.

"Lower away!" There was a swift roll and clucking of blocks and cordage; down dropped the boats, striking the water at almost the same instant. The remaining members of the crews clambered down the sides on the slideboards and took their places, tackles were unhooked, and the chase was on.

Sometime, before you die, you must go to New Bedford and there see whaleboats and gear, not pictures nor yet models, but the real, old, sweet lined, long double-enders, fitted with sweeps of a length and toughness suited to the arms of strong men, and then you will understand.

Whaleboats, when possible, sail until the harpoon is flung, and, once clear of the hull of the *Morgan*, our boats, their crews animated by keen rivalry, excitement and the almost universal human desire for gain, set sail with all speed. With started sheets, a fair wind and a good rap full they swept down upon their prey, the mate's boat leading, followed, as on a tow line, by the third's, and at a little distance by the two remaining boats foaming along much like yachts in a race. Yachts, though, never raced for such a prize.

From the crow's nest I watched them, the *Morgan* lying still with main yards braced up on the starboard tack, foreyards square, and wheel half way down (an accomplishment of successful maneuvering essential to the checking of headway before the boats were lowered),

(*Continued on page 90*)

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Outward Bound.

The whaling bark *Wanderer*, the last of the active square-rigged whalers, leaving New Bedford on one of her last voyages.

Miss Spitfire VI, owned by J. H. Rand, Jr., not only won the Del Lord Trophy at San Diego by scoring the greatest number of points, but she broke the record in the first day's racing.

New Speed Records Set at San Diego

Many Entries and Excellent Conditions Mark Winter Championship Races on the West Coast

By GERALD F. MACMULLEN

SMASHING all previous records for the 151-inch hydroplane class in the National Championship races at San Diego, Cal., December 11 and 12, *Miss Spitfire V* and *Miss Spitfire VI*, owned by Mr. and Mrs. James H. Rand, of Buffalo, N. Y., "cleaned up" the regatta trophies, including the famous Elgin cup.

Six heats were run, three each day, before a large crowd of spectators on the observation barges and on board visiting yachts from various Pacific Coast ports. In the second heat, *Miss Spitfire VI*, piloted by Stanley L. Reed, established a new record of 43.67 miles an hour, over the regulation Mississippi Valley course — twice around a two and one-half mile oval. By doing this she eclipsed her own previous record of 42.42 miles an hour, on an oval course on the Potomac River, as well as the previous straightaway record of 43.06, made by Lionel Barnesson's *General*, at Louisville.

In the opening heat, *Miss Spitfire V* failed to finish, but before engine trouble forced her to withdraw she had made one lap of the course at 47.64 miles an hour. During the second day's racing, *Miss Spitfire VI* boosted her own record to 43.68 miles an hour, only to be beaten by her older sister, *Miss Spitfire V*, with an official record of 47.05 — nearly five miles an hour better than anything done before the opening of the western regatta.

Western boats failed to live up to what was expected of them, only one, Harry Miller's *Angeles I*, finishing "in the money." However, she showed an increase of speed over her old record, the Miller boat attaining 43.13 m.p.h. in the fifth heat. *Smiling Dan III*, with which Richard Loynes brought the Elgin cup to the Pacific Coast from Florida last year, developed engine trouble at the start, and was only able to attain a speed of 34.75 in the first heat. Going back to the work barge at the close of the heat, the western defender broke a special timing gear with an off-size bevel, and was out of it from then on.

A. T. Griffith, secretary of the Mississippi Valley Power Boat Association, who acted as judge, and J. H. Rand, who drove *Miss Spitfire V* to her sensational victory, attributed the high speed to the smooth water, absence of currents and freedom from floating débris which characterized the course. Weather conditions for the first day were perfect, their being little wind, and the officials worked, for the most part, in summer clothing. The second day was less favorable, the sky being overcast, with a chilly breeze. However, it was on the second day that the best times were made.

Management of the regatta was in the hands of the San

Miss Spitfire V came back the second day and broke all records in the 151-class, setting the mark at 47.05.

Diego Yacht Club, the Pacific Coast Hydroplane Association, the San Diego Chamber of Commerce and the San Diego California Club. Through the courtesy of Rear Admirals Josiah S. McKean and Luke McNamee, the

K. & M. Photo

Taking the turns on the 2½-mile oval course in the recent championship races in the 151-class at San Diego.

Navy took charge of much of the detailed work of preparing and policing the course, and also of timing and caring for the racers. A "crash boat" from the North Island naval air station was on hand at the course, its crane being used to lift the "hydros" from the water and onto the work barge.

Following is a brief summary of the regatta, giving the order of finish:

First day. — Sky clear, water smooth, maximum wind velocity 9 miles per hour, at 1:45 P.M. First heat: *Miss Spitfire VI, Angeles I, Miss Westchester II, Midge II, Janet II, General, Miss Quincy VII, Baby Mine, Smiling Dan III.* Winner's speed, 42.33 miles per hour.

Second heat: *Miss Spitfire VI, Boots II, Midge II, General, Miss Quincy VII, Hadley Plane II, Esmaral III.* Winner's speed, 43.10.

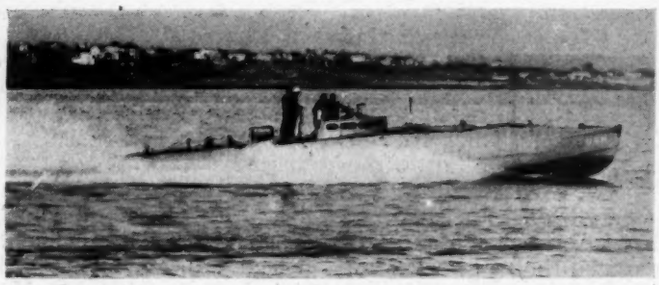
Third heat: *Miss Spitfire VI, Boots II, Angeles, Janet II, Midge II, Miss Westchester II, Esmaral III, Miss Quincy VII, Baby Mine, Hadley Plane II.* Winner's speed, 43.67.

Second day. — Sky cloudy, water smooth, maximum wind velocity 16 miles per hour, at 11:02 A.M. Fourth heat: *Miss Spitfire V, Miss Spitfire VI, Angeles I, Boots II, Midge II, Esmaral III, Hadley Plane II, Miss Quincy VII.* Winner's speed, 45.55.

Fifth heat: *Miss Spitfire V, Miss Spitfire VI, Angeles I, Boots II, Midge II, Janet II, General, Esmaral III, Miss Quincy VII, Miss Westchester II, Hadley Plane II.* Winner's speed, 47.05, breaking all previous records.

Sixth heat: *Miss Spitfire VI, Angeles I, Boots II, Janet II, General, Miss Quincy VII, Esmaral III, Baby Mine, Hadley Plane, Miss Spitfire V.* Winner's speed, 43.38.

The sixth and final heat was featured by two things — the largest field of starters, and the only serious accident of the regatta. Thirteen boats took the white flag, and roared away down the course to the first turn. The first lap saw them all going strong, as did the back stretch and the last turn of the second lap. *Miss Spitfire VI* was well in the lead, with *Angeles I* in second place, and *Quicksilver III* in third position. When but a few yards from the finish line *Quicksilver III* struck a freak wave — and it was all over. She scooped up water, slowly settled and disappeared beneath the surface. Her driver, B. V. Forsythe, was rescued by one of the navy patrol boats.



The Navy's big 52-foot Thornycroft torpedo recoverer at San Diego.

In addition to the hydroplane races, for the 151-class, two heats were held for "hydros" powered with outboard motors. This event was won by *Bullet II*, built by Dr. George F. Fiske, Jr., and said to have cost only $25. The speed was 15.4 miles an hour.

The following officials handled the running of the events: Starter, A. T. Griffith, secretary Mississippi Valley Power Boat Association. Timer, Lieut. Comm. W. Mack Angas, U. S. N., and assistants. Judges: Commodores Joe Beek, Newport Harbor Yacht Club; Owen P. Churchill, Catalina Island Yacht Club; H. M. Worcester, Southland Sailing Club; D. R. Radford, Los Angeles Yacht Club, Dr. E. P. Chartres-Martin, Southwestern Yacht Club, and F. B. Thompson, San Diego Yacht Club; R. T. Robinson, San Diego Athletic Club; Edgar A. Luce, San Diego Rowing Club.

By amassing the greatest number of points for the meet (1,000) *Miss Spitfire VI* won the Del Lord trophy; *Miss Spitfire V* won the General Petroleum trophy for second highest number of points, and the Elgin trophy for the greatest speed, while *Angeles* won the Union Ethyl Cup.

After the regatta, J. H. Rand, Jr., mounted an 11-foot airplane wing athwartships of *Miss Spitfire V*, and made one round of the course. While it was not official, his time for the run was slightly better than 54 miles an hour. The wing, at a speed of 50 miles an hour, develops a lift of 600 pounds.

Whippet—A 1926 Fast Day Cruiser

Whippet, a new 67-foot express cruiser owned by Oliver G. Jennings.

In designing *Whippet*, J. H. Wells has turned out a most distinctive and unusual fast day cruiser for use on Long Island Sound and along the coast. The deckhouse saloon (at right) is an attractive, livable compartment, while forward of it, below deck, is a double stateroom. Power is furnished by two Winton gasoline engines (shown above) which give the yacht a speed of about 20 miles per hour.

Whippet is 67 feet in length, with a beam of 13 feet 6 inches and 4 feet draft. The enclosed pilot house (above, right) has a wide divan seat at the after end.

Photographs by M. Rosenfeld

The Most Important Phase of Cruising

The Part That's Generally Overlooked By Promising Young Authors Writing Nautical Stuff

By Alfred F. Loomis

Dear Skipper:

I SAY "Dear Skipper" because I feel that if I put this in the form of a letter I can bare my heart to you and mention names and places more frankly than I could in a formal article. But I want you to realize that it is going to be an article and not a letter, and that I hope you will pay me for it at the regular rate of five cents a word.

Well, a paragraph in a story in your December issue made me appreciate that we (not you and I especially, but all of us cruising blokes) forget or gloss over or distort the most important phase of cruising — namely, the loafing phase. We talk about the landfalls we have made, and the seas encountered, and all the while we know that the high spots of a cruise are those spots in which a man may lie in his bunk and jabber the ear off an attentive listener.

Now, take this Lloyd's Harbor Cruise of the Cruising Club of America which, thanks to George Bonnell's generosity in the matter of barges and turkey with cranberry sauce, and one thing or another, has become the major yachting fixture on the eastern coast of North America. As you know, it happens appropriately on Columbus Day, and varies in length from two days to five according to whether October 12th occurs at the end of the week or in the middle of it.

The Lloyd's Harbor Cruise has a most imposing title, and if you didn't know to the contrary you would think that Lloyd's Harbor is 500 miles from anywhere, and that you would have to cruise and cruise and cruise to get there. And that nobody but a salt-encrusted cruising man would ever have the nerve or the leisure to attempt it.

The facts are otherwise. Lloyd's is right in the middle of everything. When you lay for it you're there almost before you have time to get the stretch out of your throat halliards. And the real Columbus Day cruise doesn't commence until all the anchors are down in a couple of fathoms and the rowboats start sashaying around.

And that's why the cruise is so popular. Does anybody have to stand a long trick at the wheel? No. Or get up in the middle of the night to shift sail? Never. Or eat a cold, wet meal standing up? Not as long as the *Beatrice* and her barge are in harbor. No sir, the Lloyd's Harbor Cruise is a standstill event with the wheel lashed and an awning the only piece of canvas hoisted, with the bare possibility that somebody will rouse out early and hand you a mess of scallops all opened and ready for the fry pan.

Two years ago was the first time I took part in this cruise, but the memory of it has been dimmed by many subsequent events, so that cruise will not figure large in the memoirs of my life which I hope you will publish some day. A year ago I couldn't go because I had just taken on a sort of a job and had to make a good impression on my boss. But this year — or rather last fall — was a bird of another feather.

Linton Rigg — if you don't recall who he is I can jog your memory by saying that he is the man who still wastes his time trying to argue auxiliary motors out of sailboats — Linton couldn't go, but he asked Gordon Raymond, Samuel Wetherill, and me to take the *Filatonga* and enter her in any racing that might be pulled off over the week-end.

Mr. Wetherill is another man I'd like to make you better acquainted with some day. He is a white-haired centenarian but he can still sail a boat, when he has to, without injuring his amateur standing as the finest loafer I ever loafed with. Gordon Raymond is that quiet individual whom you have often mistaken for an earthquake. You know, you rush into the street or on deck as the case may be, expecting to find the whole world gone topsy-turvy, and then you realize that it was only Gordon laughing.

The three of us chipped in and sent a wire to George Radulic, who is a sort of benevolent pirate living out in Chicago where the yachtsmen, he tells me, can draw their drinking water right from Lake Michigan, but don't have to because Canada is so near by. George drew up an alibi with the bank where he works and caught the Twentieth Century to New York and we all arranged to board the *Filly* at Larchmont and make a start bright and early. Eight A.M. was mentioned.

Now I have made some bright and early starts in my time, man and boy, and ought to have known better, but the fact is that when I got to the clubhouse at 11 I was the first one there. And when the last man showed up a couple of hours later he had forgotten the limes and had to drive up to the village to get them. However, we were under way by 3, reached Lloyd's after two hours or so, let go the anchor, and commenced the cruise.

Commencing the cruise consists in getting into the dinghy, rowing to the nearest boat, and asking permission to go aboard. Permission granted, you go below and say, "What, so early in the evening? Well, I don't care if I do." That done, you range the boat fore and aft, saying, "Well, I never saw so much room in a boat of this size," and presently you shove back aboard your own packet and say to your shipmates, "Well, I never saw such a cluttered up mess in my life. Give me the good old ——— (name furnished on request) every time."

Continuing the cruise is very much like commencing the cruise. You visit each boat in turn, making the same remark about each, and returning to your own boat at intervals to receive callers and hear them say the same thing about yours. After the fleet has been roasted to a good old-fashioned turn you lie around on the bunks and all talk at once until Gordon laughs the lamps out and there's nothing to do but turn in.

This cruise of which I write was very nearly spoiled by a few energetic souls — I didn't see who they were, but they talked as if they had come from New Rochelle — who had the nerve to suggest a Sunday morning race in the Sound. Think of it! Trying to get a bunch of Cruising Club men to hoist sail, up anchor, and beat out to the Sound. And then, adding insult to injury, to race when they got there. We all told them where to get off and that we'd be blamed if we'd spoil this cruise with any sailing. We were there to have a good time and we were going to have it, even if I had forgotten the White Rock.

But in spite of what we said we all knew we would have to race if the rest did — first, because the *Filatonga* could beat anything in the harbor, and second, because we'd be ashamed to remain at anchor if the rest got under way. The crews of all the other boats were as reluctant to move as we were, and yet we would actually have ruined the cruise by racing if it hadn't been for an unforeseen event.

A boat caught fire at the starting hour and we all grabbed fire extinguishers and rowed over there to put it

out. Now there was an occasion for you! A dozen dinghies floating around when we got to the burning boat and three dozen voices yelling at us not to close in as she was liable to blow up any minute.

And Sam Wetherill at the oars of our dinghy saying, "Danger be damned! Why, I saw a dozen boats burn in the Navy, and they never blew out at the sides. They always went straight up." And me saying, "Don't get too close, Sam. You can't ever tell." And Sam rowing our bow right up to that blazing inferno. And me standing in the bow because there wasn't any other place to stand and trying to look nonchalant while emptying the extinguisher down the hatch and all the while wishing I'd had a sledge hammer to beat on Sam's head. Oh, yes, that was an occasion.

And then Frank Draper in his *fin de siècle* asbestos overcoat emptying a gallon of foam into the fire and Nelson Wolfe (another ex-Navy man) at the oars of Draper's dinghy crowding in as unconcerned as if they'd been battling a hurricane off the Cape in the *Flying Cloud*.

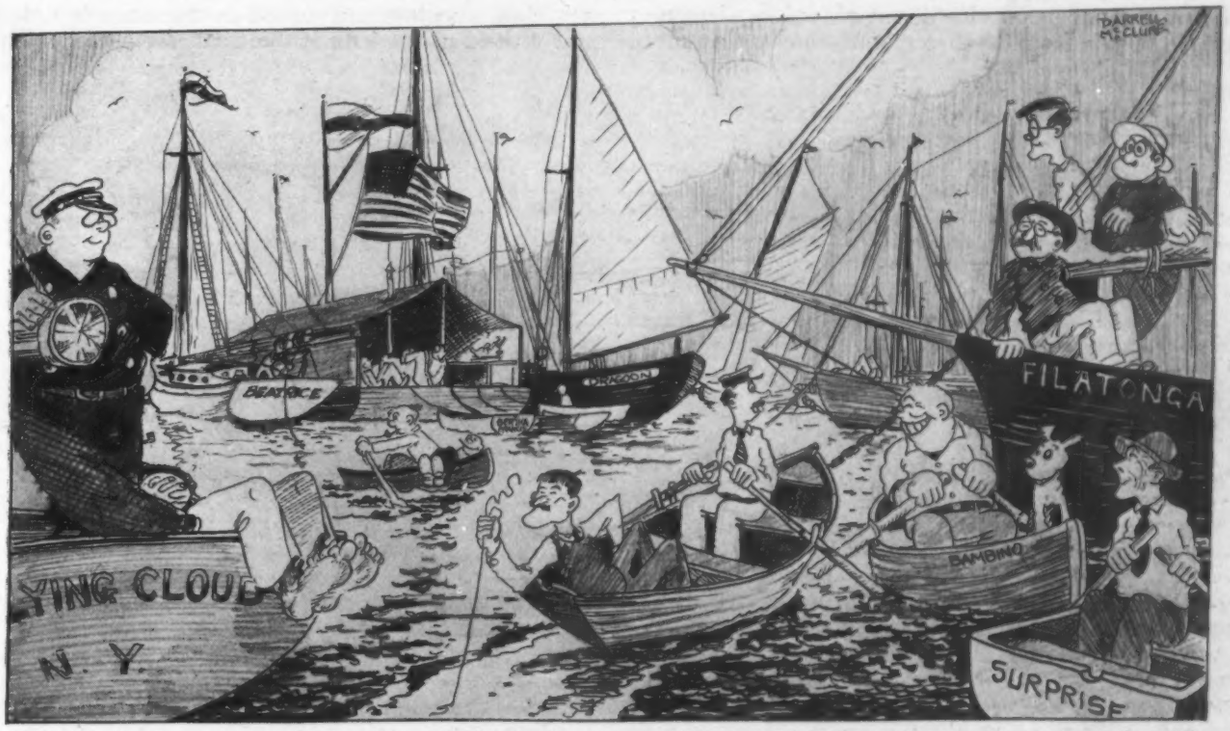
So the boat burned to the water's edge without blowing up, and was beached, and the insurance underwriter, who happened to be on hand, rummaged around in the bilge and salvaged three bottles of cheer, and the race was *nolle prossed*.

During the rest of Sunday, and on Monday and part of Tuesday, three of us on *Filatonga* cruised around the anchor to our hearts' content, but Gordon Raymond, who doesn't know what it is to be lazy gracefully, rowed up to Huntington once and over to Northport a couple of times trying to buy some more supplies. So, as I say, we all lazed gracefully except Gordon, and every few hours George Bonnell found another crate of turkeys in the hold of his barge and invited eighty or a hundred over to a six-course dinner, and there was absolutely no concerted or indiscriminate sailing, and the cruise was the high spot of the yachting year. If you don't believe me you can ask George Radulic, who came a thousand miles to attend it. George is a cruising man after my own heart. He has a lovely little Alden schooner, the *Fair Maid*, and he's probably the best cruising man we have in the club, because from one season's end to the other he never moves her except to and from his mooring and the hauling ways.

Coming out of Huntington Bay after four days of cruising luxury, the *Filatonga* walked away from the fleet when she got her air, and Sam, who was at the wheel, said he never saw an Alden boat that could beat her, and that surprised me a lot because I've read YACHTING a good many years and I always thought Sam was at least a friend of John's and wouldn't say anything like that. But I realize now that Sam meant he never saw an Alden boat that flies as many jibs as the *Filatonga*, and that's perfectly credible.

Hoping again, Skipper, that you won't mistake this for a letter to be published in your correspondence section, but will accept it as a serious article on a neglected phase of cruising and will pay me at your usual rate of ten cents* a word, I am, Yours very truly, ALFRED F. LOOMIS.

[* The Editors beg to inform Mr. Loomis that the rate of ten cents a word is only paid to those authors who are intent more on the merit of the story than on the number of words they can spill at ten cents per.]



"Commencing the cruise consists in getting into the dinghy, rowing to the nearest boat and asking permission to go aboard."

We Agree with Bill Bigelow

IN commenting on the death of Lord Dunraven, Arthur Brisbane, the well known columnist, opines that Lord Dunraven was just as important to the world as might be an old native of Australia, trying to perfect a boomerang that would go farther, and come back more surely, than any other. "Sailing yachts and boomerangs are out of date," quoth Mr. Brisbane.

Commodore Wm. McP. Bigelow, the well known enthusiast from the Eastern Shore of Maryland, takes a decided exception to Mr. Brisbane. "Would it not be worth your time," asks Commodore Bigelow, "to inform Mr. Brisbane that sailing yachts are taking a greater part in the world of sport than ever before?"

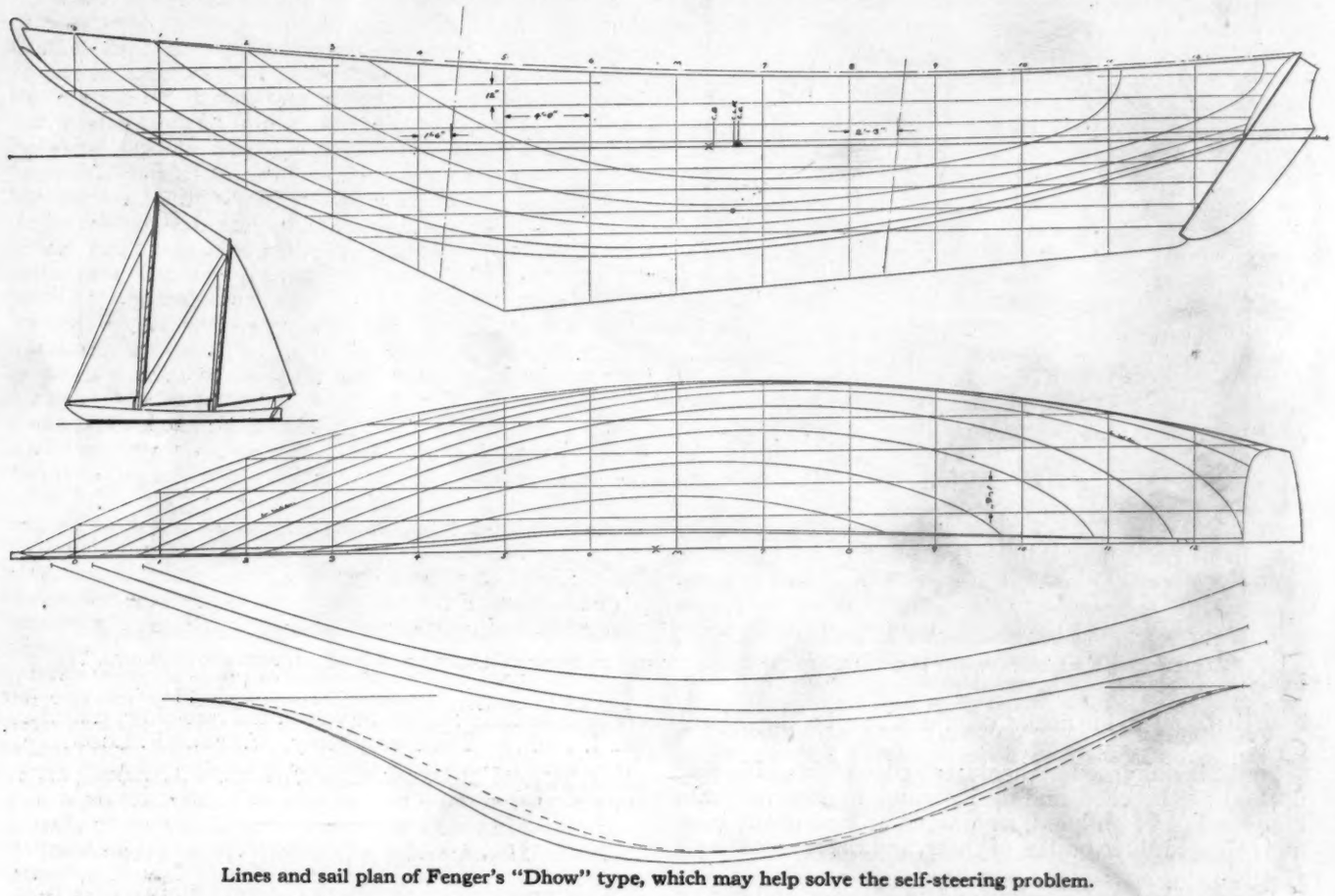
The Dhow Type

Experience and Research Produce an Unusual Design, Which May Be the Solution of the Self-Steering Riddle

By FREDERIC A. FENGER

TO me, the evolution of an idea in the abstract is the most fascinating of occupations to which one can apply the mind. Crazy whimsey has a chance, and one's unhampered thoughts may go as far afield as the imagination can send them. The precipitation of an idea from the abstract form to its tangible, or workable, conclusion, is hardly less engaging, for there always follows the satisfaction, even though failure attends, of having learned something which may be of value. It is like an Oriental feast in which the dessert is followed by the more solid food which gives actual nourishment.

Of course, one must have an *ab initio* viewpoint developed largely from the dream stuff which arises out of sound experience. Then one must, in one way or another, have a certain grounding in the current theories of the art — else one's labor is more than likely to go quite astray. For these are the tools of the trade. But most important of all, one must be able to lay aside these tools, forget this smattering of theory, in order to go back, with a clear mind, to the *ab initio* viewpoint.



Lines and sail plan of Fenger's "Dhow" type, which may help solve the self-steering problem.

Many years ago I was confronted with the problem of finding a suitable craft that could be sailed from a beach which was often surf-bound and knew no harbor for many miles in either direction. As I could depend upon no crew other than my own arms and legs, she must be light enough to be dragged up the beach by her lone owner. The answer, then, was to turn to the decked sailing canoe. But the only sailing canoes to be had were plumb stemmed affairs, and wet; and were built with little or no rocker to their keels, which quite condemned them in my eyes for launching or beaching through the surf. And they were encumbered with too many contraptions in the form of folding centerboards and rudders which would jam, and wore too much "jewelry" to suit my beachcomber's fancy for utter simplicity. Clearly I should have to evolve my own type. So I rockered my new child's bottom and turned up its ends *à la* Rob Roy, and walked about with it like that, for a while. Then I happened upon an intriguing statement in a yachting magazine. The writer, who had been sailing on one of the 90-footers — *Columbia*, I think — remarked that while on the wind, she was so perfectly balanced that only a degree or two of helm was needed to keep her on her course.

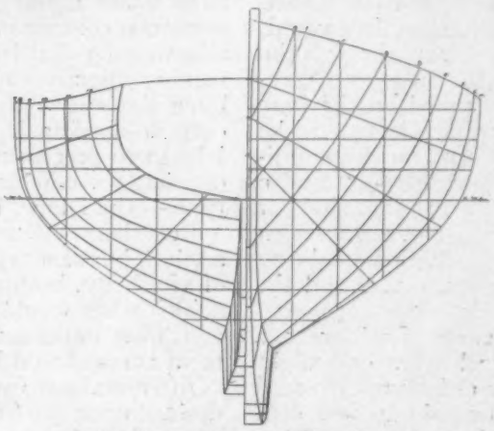
Why, then, could not my canoe be made to balance absolutely by moving her board fore and aft till the center of lateral resistance coincided with the effective center of the sails above it? And no rudder would be required at all, while at one stroke a welter of gear would be done away with. For, to meet the variations of wind and sea, the

main sheet could be eased or hardened — the double canoe rig being peculiarly suited to this requirement — and so my problem in the abstract had solved itself.

It was a simple matter to design my first offshore canoe, *Ouinnetka*, with her deeply rockered keel and overhanging ends, and a plate board which ran fore and aft, under the cockpit floor, on little brass sheaves rolling along the top of the well. In her I cruised many miles on Michigan and Huron, during the seven years I owned her. The *Yakaboo* was her husky grandchild which I took with me, some years later, to the West Indies.

Having done away with the rudder, the next step, that of self-sailing, did not suggest itself at all. Possibly because there seemed no necessity for further simplification. During my 'longshore runs on the Great Lakes, and the lengthy jumps between islands in the West Indies, I might as well have a little something to occupy my attention, aside from watching wave and weather. The mainsheet supplied this want.

Then a curious thing happened in the Martinique channel. I had put off from Grande Rivière on the second day of a windy quarter, and the trade seas were running high from the Atlantic into the Caribbean. Off on a wild ride to Dominica under jib and mizzen. But I'll quote a bit from my log. "I made fast the jib sheet and prepared to steer by the mizzen when I discovered that the canoe was sailing herself." Later I gave her the reefed mains'l. By this time I was only heading up for the very largest of the combers, and when she became logy because of water leaking down through the cockpit floor, I let her jog along by herself — without the mains'l — while I sponged her out through a hand-hole. "What occupied my mind above all, however, was the discovery that the canoe would sail herself under the jib and mizzen. I had thought that no boat with so much curve to her bottom could possibly do such a thing — it is not done on paper. The fact remained, however, that the two small sails, low down and far apart, kept the canoe on her course as well as I could when handling the mainsheet." As soon as she was freed of water, I gave her the reefed mains'l again, and making fast the sheet, kept an eye on the compass. I found that not only was she sailing herself, but that she seemed to *want* to sail herself. If a sea threw her bow off, she would struggle up to her course again, and then stay there, as though fitting herself back into an invisible groove. The same thing happened, but in the reverse order, when she was cast by the stern, which was not so often.



Body plan of Fenger's "Dhow" type.

Now this was not merely a matter of "perfect" balance between lateral plane and sail area, for I had long since discovered that it made no great difference — within certain limits — just *where* I placed the board. There was a tolerance of nearly a foot! So my neat little premise of the "perfect" balance already had been exploded! Off wind, of course, there lay a decided advantage in being able to move the board well aft of its usual position and, conversely, she would lay to best with the board well forward. That is self-evident. But on the wind another element entered in, and as I could now eliminate the *exact* placing of the board, this new element must concern itself entirely with some relation between the hull and the sails.

But what a hull — to tend to sail herself, — and the mere notion that this deeply rockered canoe should want to hold her course seemed so paradoxical that I was hard put to it for any adequate explanation. In fact, it was some time before I could arrive at *any* conclusion —and that has not been altogether satisfactory except in that it led me to a new line of thought. But I shall continue with the *Yakaboo*, for a space.

Despite the fact that a free-ended boat, with her plane of lateral resistance abnormally concentrated about midway along her waterline length, is known to require more alert attention to her helm than the longer footed craft with shorter ends, this did not seem to hold with *Yakaboo* and her predecessors. In a quartering breeze, for instance, there was no great tendency to fetch up unless a breaking sea or added wind pressure laid her over, and then she would always come back on her course as soon as I evened her up, using the mizzen mast as a lever — much as a lumberjack rolls up a log with his cant hook. This I could only explain in part because of having no rudder with its attendant skeg, or deadwood, the after part of the hull being just as free as the forward portion to adjust itself to the initial inequalities of pressures which are encountered when sailing in broken water. In other words, a sheer was not encouraged to continue even though it might be started. Or, one might better say, the ends were even freer than in the usual long-ended boat. This *may* have been a contributing factor. But what I believe had much more to do with it, was the fact that the hull was more symmetrical than usual with the outline of the sail plan. Rather by accident than design, although the sail plan had been laid down to spread fairly evenly forward and aft from the combined center. This was done in order to insure as uniform wind pressures as possible, which was easy enough, as a cruising canoe usually is well within one wind stratum, the lowest. Also, the hull lifted out very evenly as she heeled. Nowhere was there any conflict of centers. The conclusion is, perhaps, inadequate. One might go on in endless speculation, and have to admit — in the end — that this phenomenon merely was a matter of happenstance. In other words, that our meager theory is not yet adequate. We know so little of the action of the heeling hull!

My first real hanker to solve the problem of self-sailing did not come till some years later, when I chanced to meet Father Chrysostom in the Bahamas. With glowing eyes he told me of a week he had spent with Slocum on the *Spray*. How, after a night and breakfast under the lee of some lovely little cay, the redoubtable Captain would "up jib," put her on a course, and go below to start a kedgeree for lunch. Then he would appear on deck again, and while the stew simmered and the little ship sailed unattended over the pale blue "bank" water, the two would sit on the cabin house and gam like old cronies as the world slid by. That was cruising. With no earthly cares beyond the stew, and their pipes, and their own free thoughts. To me, the idea was fascinating, and it suggested the possibility of a man and his wife cruising indefinitely on a sizeable vessel — the only limits, aside from that of purse, being the size anchor for *one* to fish, and the length of main boom for *two* to handle. In *Diablesse*, we had found that the smaller the crew, the better. But her lower offshore limit was three, and while our Bahama conch was an ideal hand in every way, he belonged to an extremely rare species of seagoing bird.

One might never be sure of getting another like him. A clinching argument, then, for the self-sailer. Properly rigged, my over all limits would be 60 feet for two, and 45 feet for the single-hander, provided they know their business. As the ketch rig allows of more uniformly effective distribution, fore and aft, I decided to forego my preference for the schooner in working out this new problem.

From the hint which *Yakaboo* had given me in the Martinique channel — that the relation between the hull, *per se*, and the sail plan be looked into — it struck me that the obvious starting point would be with the more fixed element, the sail plan. So I drew up a ketch rig — gaff-headed at that time — over a base line of 60 feet plus a reasonable extension beyond the stern. As definite limits were imposed upon the height of the rig, its total area, and the size of the mains'l, while the jib and mizzen were to be nearly equal in proportion, it can be seen that there was no great chance for variation at this point. After the centers had been located, proportionate areas for lateral resistance were laid off directly below each sail, but inverted, like foreshortened reflections. In other words, each sail was directly taken care of by its own distinct area of lateral resistance having the same center as that of the sail, and no immediate regard was taken concerning the combined centers, as they would, of course, agree. Then a curve was drawn through the centers of the three sails. (Actually, the ordinates representing the areas of the sails were erected on the base line.) As the true centers of pressure are known to be somewhat forward of the geometric centers, these ordinates were moved an arbitrary distance forward, and a new curve drawn in. I might say, in passing, that for purposes of comparison, similar curves had been drawn for the schooner, yawl and sloop rigs, due regard being taken for the efficiency of the individual sails and the rig as a whole.

From this more or less arbitrary curve of sail areas, a tentative underbody was laid out with what one might call its fore, middle and after centers of buoyancy placed directly below each sail. To this underbody was subjoined the three lateral planes, and the ends were run up plumb to a sheer line. The result, gentlemen, was a prognathous double-ended something-or-other resembling a bloated horn-pout with three ventral fins!

I must confess that I viewed this ugly child which had been fostered out of the abstract with some dismay. And yet I knew that I was getting somewhere. The rest merely would be a matter of design and tolerance. That is, the waterline was shortened to give her dry and seaworthy ends, while the lateral planes were merged into one, with the heel well forward in order to maintain, as far as possible, the original triangle under the jib. For it is the bow which usually is thrown off, either from the impact of an oncoming sea or the initial pressure of a squall, when on the wind. She bore a more reasonable aspect, now, and was not unlike a Northumbrian coble. I began to look into Northumbrian cobles, and learned that they were very seaworthy craft with a reputation for sailing fast, pointing high, and hanging on.

More and more, I was coming to believe that the proper place for the center of buoyancy should be as far forward as I could get it without making her entrance too full. Yet I dared not depart from such waterlines near the surface as would insure a minimum of wave-making disturbance. But the farther down I went, the farther forward I could place the centers of each plane; and here I was well within good practice. The "rake" forward was considerable, and by this means I brought the center of buoyancy very nearly amidships while maintaining an almost normal waterline. While I was aware of the risk I was courting of developing a hull which might have a strong propensity to broach-to in a following sea, it seemed reasonable that if I worked back to a normal form of displacement curve, with the after part merely lengthened out somewhat, rather than one which had been distorted in order to move its center forward, there should be no tendency in this direction. In other words, the afterbody would be tailing out behind the forward portion of the hull.

By this time I had discarded the gaff rig for that of the bugeye, which suited my purpose better, and this was gradually worked up into a jib-headed ketch.

One evening, during pre-cocktail moments at a friend's house, I happened to pick up Chatterton's *Sailing Ships* and there, by the bones of my ancestors who may have known Hypatia herself, was the image of the very thing I was working upon. The model of a dhow — refined and in yacht form — with her long raking stem running steeply down to the point of greatest draft, well forward, whence the keel sloped up in a graceful curve as it went aft. Though I had seen crude representations of the even cruder sailing craft of the Arabs, and given little thought to them, here was the creation of a master architect. She was as light and graceful as a dragon fly. And while I have found nothing concerning the philosophy of this particular contour in the Egyptian dhow, it seems reasonable to infer that it has been arrived at in an empirical manner directly to balance the huge lateen which was hung above it. Further inspection showed that the keel even drooped again convexly, under the mizzen. So now I had two precedent craft to help shore up my growing convictions, and actually I had found a name for my type — the Dhow. I drank to its success!

But there yet remained many questions for me to settle. The exact type of load waterline to use; what form of afterbody, both above and below the water plane, to adopt; what would be the effect of the upsloping keel; and, most important of all, from what form of displacement curve should I work?

After making various designs and analyzing them, I decided upon the Colin Archer curve as a basis for future comparison, but somewhat modified. The high point was placed exactly half way between the ends of the waterline. The versed sine forward was built up in order to avoid a "shoulder" when the hull would be under press and speed. The trochoid aft, was eased so that it nearly conformed with the usual trochoid which would normally go with the forward section of the curve, but with its ordinates spaced a little wider apart (in increasing increments) to agree with the lengthening out of the hull, aft. This curve, with its center of gravity (C.B.) at the mid point, was to be applied strictly to the hull itself, no account being taken of keel displacement. The 'midship section — "M" on the lines, and where the greatest beam occurred on deck — was placed slightly forward of the center of the waterline.

For the purpose of future comparisons, the sections were not faired into the keel, thus keeping the two lateral areas as distinct quantities. The combined center — figured without the rudder, which ordinarily will swing free and have little or no effect — comes somewhat aft of the mid-waterline position, and how much forward it will actually travel is still a matter of speculation. For experimental purposes, a small centerboard will be fitted aft, just forward of the rudder, while the latter will have a locking device so that with these two, separately or in combination, a considerable variation in the lateral plane can be obtained.

As to the rudder itself — it is a necessity in this type of craft, for use under power or when maneuvering in chan-

(*Continued on page 86*)

The Cruise of the *Geryon II*

Three Novices in a 36-foot Yawl Hop Across to Cuba

By George E. Rehm

Part II

FOR three days after leaving Charleston for Miami, the weather was calm and variable and progress slow. The third evening, off the northern coast of Florida, we lashed the wheel and all slept through a calm night. The next morning was cold and foggy with a light breeze from the north. As it increased we stood off on our course, deciding to wait a bit before breaking out the mainsail, for the sky was far from promising. A fishing schooner passed us under full sail, headed inshore, apparently having intimation of a blow, so we laid another two points toward St. Augustine. Within an hour we decided those on the schooner were not lacking in judgment. The wind fairly leaped out of the northwest. Within a few minutes we were boiling along at six knots under jib and jigger, which is considerable with 13-foot beam. But our course was due south, in order to hit the Florida coast at St. Augustine, so we enjoyed it.

Then the sea began to pick up. Pick up is mild. That sea just piled up in a row of humps, each hump hot after us. And so we learned about pooping seas. Foolishly, we were towing the dinghy, but even more foolishly we did not take it aboard when we realized what we were in for. I can still see that dinghy hanging high above the stern, only to come down at fifty-miles-an-hour and ram helplessly into the jigger boomkin. One of those chute-the-chutes performances stove a hole in her bow, but luckily above the water line. Then we took her aboard and lashed her.

Tom looking for a landfall—or why the Coast Guard saved us.

That night was a marvelous nightmare. Later, as a memory, it was superb, filled with a reckless, raging power, that was incomparable. At the moment it was a trifle too personal for appreciation. Hatches were battened down, skylight covers put on and a hasty survey of the galley showed everything as well stowed as possible; but it would have taken iron chains to hold things down that night. The entire galley equipment got adrift during the night, bombarding all sides of the poor craft. Once the forward hatch was ripped completely off and only by the grace of Allah did it hang for a moment in the port shrouds and permit its recovery. There was no chance of keeping the cabin dry. Great combers were breaking directly overhead, dropping deluges of water that Noah would have recognized. But the old ship would shudder and shake herself and stagger off on her course, groaning, but ready for the next attack. *Geryon II* won our undying affection that night. As a mere fabric of wood and nails, she fought on our side in rare style and it was certainly her dogged staunchness that brought us through. All we did was hold the wheel, which required all our arms and legs.

Morning broke darkly, as though the sun refused to look on such a sea. I don't blame Sol. Heavy clouds were massed black and low in the sky; our mast seemed to rake them. With daylight came a proper comprehension of our plight. I happened to have the 6 to 8 watch and so became accustomed rather gradually to all the loose water that stood over us. Steve and Tommy were below trying to sleep. Even so, it was sickening enough to feel that boat pitch forward at an angle of some 45 degrees and slide down a watery mountain, while astern came a foaming mass of spray and solid ocean that would have floated a steamer. Later, we learned it was a force 11 wind, and one of the worst storms on the Florida coast for 20 years. Not that we are to argue.

At eight bells I yelled for Steve. He stuck his head into the cockpit and took one look around. His face was a study. I had to laugh, for just then a greybeard perched over the jigger truck and flopped on top of us with a hissing roar that was none too cheerful. Steve just got the hatch closed in time. In a moment he reappeared and we both grinned a bit, but not too convincingly. There was no doubt as to the seriousness of our situation.

While reading the log in the jigger shrouds, Steve gave a yell. I looked and saw the granddaddy of them all crack over us. Just about one-fifth of the ocean must have been in that wave. Steve leaped up the shrouds, standing on a swimming ladder lashed there. Then the whole craft disappeared, according to Steve, leaving him hanging on a pair of steel shrouds with nothing in sight except two masts and a rag of sail. How the cabin top withstood that blow is beyond me. Tons of water whacked the *Geryon II* a blow which seemed enough to burst her into splinters. Tommy, below, was flung from one bunk clear across the cabin and against the carlins. The stove in the galley sailed forward into the chain locker, wedging itself against the mast. Almost all the china was shattered. The cat made one leap for Tommy, almost knocked out by the smack on the head, sunk all claws into his back, then tore for the hatchway, yowling something awful. When originally brought into this world Pootch was coal black but she now wears a few grey hairs as souvenirs of that occasion.

We discussed sea anchors; even dug out the book that contained all technical advice, figured out how we could rig one, and then gave it up, preferring to take a chance on reaching land. From time to time we knew a wave was

certain to break over us. It was inevitable, for it was impossible to catch every one just right. Cigarettes were running low, but it was impossible to keep one lighted on deck. Once more, we were soaked through and cold; we lacked hot food and we were dead tired. But one more card was still to be dealt. We discovered that the head lacings on the jigger gaff were loose.

If the jigger went we would lose all control of the ship, and a reefed mainsail would have been blown out, even if we could have gotten it set. So Tommy offered to repair it. The canvas was holding by a thread or two at the end of the gaff, meaning he had to climb out on the gaff and take a few turns. The boat was touching almost every angle in a semicircle. It was ticklish, but absolutely necessary, so up he went. After a hard fight he managed a makeshift lashing that would hold for a time. While he was clinging in the throat he saw land to starboard. That was a relief, and soon after we found the wind and sea to be dropping so that by midday we were sailing fairly easy, although highly curious to find just where we were. It was not until after dark that we picked up Cape Canaveral light.

Then an argument started. We were dead tired and the sky was still full of wind. Could we find a protected anchorage? That section of the Florida coast is most discouraging in the harbor line. There was, however, the small hook at Canaveral. If we could make the lee of that we might be all right until morning. But anchors would never hold in the sea that was still running. Well, here is our figuring. The wind had held northwest for 24 hours. The coast ran northwest and southeast. If the wind held we could drag anchor and slide directly down the coast. That logic won the debate.

Steve.

After much tacking, the motor being hopelessly soaked, we got around the hook. It was pitch dark but we moved up into a fairly protected piece of water and over went both anchors with plenty of cable. The wind was still blowing strong, but we damned the wind, fell into wet bunks and caught some sleep. That was well after midnight. At 10 o'clock we awoke and went on deck.

No excuses are offered, nor is eulogy demanded. The disgraceful seamanship of leaving a boat unguarded during the night in such a wind is admitted. But, once on deck, we discovered Canaveral was completely out of sight, the coast line was still two miles away as when we had anchored, and we were nearly 15 miles down the coast from where we had started. And still going, as gently as you please. The wind had not varied a point and the seas were running exactly parallel with the shore. So we managed a good breakfast, got sail on her and went on our way.

That night we had perfect sailing under myriad stars and the thin yellow shaving of a new moon. It was still a problem as to where we could put in before Miami, in order to have the motor overhauled and obtain a full night's rest, so when a fishing boat put out from shore and offered to show the channel into St. Lucie Inlet, we agreed without hesitation. Once more we tried the motor but it was hopeless, so we asked our friend the fisherman if we could make it under sail. Sourly he pointed at the shore. On each side of the inlet, piled high on the beach, was a wreck. They had tried it under sail. With breakers still all along the beach we did not feel too optimistic, but the wind was almost due east, directly in back of us, and we decided to chance it. Well, we made it, as neat as could be, with Steve at the wheel and Tommy and I forward with poles to fend off if rocks appeared. They did, and in quantity, apparently just below the surface, yet somehow we cleared them all and finally rode at anchor in a fine little harbor. Fifteen minutes later, without changing clothes or washing, we blew into the big hotel, causing several old women to gasp a bit at our appearance, and asked if a few rooms and baths were available. The clerk was a trifle backward about it, but agreed after hearing our yarn, and we steamed and cooked in hot water for several hours, and slept. And then we ate. Lord, the food we stowed during that visit.

On the trip to Miami, Tommy contracted a fever of some sort, making it necessary to lay up at either Palm Beach or Miami. We voted Palm Beach. After leaving St. Lucie Inlet we were becalmed in a sea so flat that it was not necessary even to furl sail to avoid slatting. The breeze during the afternoon had been almost due south, so we had tacked out to sea, leaving Jupiter Inlet light astern. Later in the evening the breeze picked up again, still from the south, but according to the log we were making between two and three miles an hour. The night was warm and clear, almost ideal sailing, so we refused to bother about our lack of speed and lazily enjoyed it all. During the night we became curious about not picking up other lights, even though we were some distance out, but it was not until morning that the breeze shifted to north, permitting us to move along at a fair clip and edge in toward shore. About three hours later we sighted a light, hauled in close and rubbed our eyes in surprise. It was Jupiter Inlet light. We had passed it the night before. Thoroughly mystified, we examined the log. For the past three hours it had registered 14 miles, just about correct according to the breeze. During the night it credited us with 41 miles. In other words we had sailed nearly 60 miles and were just where we had started.

All faith in our navigating ability was shattered. Charts were pored over by each one in turn, and then in unison. There could be no doubt as to the light, but also it could not be denied that we had been moving forward the entire night. It was over our heads. Then it was recalled that there was such a natural phenomenon as the Gulf Stream. Having sailed some distance from shore we had gotten plumb in the middle of it. Along the Florida coast it flows about three miles an hour. While going ahead we were also being pushed back. It was the old game of two jumps forward and three back. We were disgusted, turned on the motor and ran for Palm Beach under sail and power.

The only thing to mention in this yarn about Palm Beach is that we had to stay a month to get Tommy into

fighting condition and that, for the wealthy place it is, the good citizens might club together and dig a real channel into Lake Worth.

Four weeks later we wandered forth to sea once more. Yucatan by this time was out of the question. We had to be back in New York by April. Moreover, the state of Yucatan had declared itself Soviet, closing all ports. We considered Honduras, but a revolution broke out there and its ports were declared closed. Finally, we gave it up, voted to cruise around Cuba and possibly Jamaica and go home. So on to Miami, where we enjoyed a day or two of swimming but did not enjoy the continual necessity of escaping real estate agents, then to Key West, where we were to jump to Havana.

Now, we had already encountered the Gulf Stream and were thoroughly appreciative of its current. We were informed that a motor boat could head southwest by west and thus land at Havana which is practically due south of Key West. But we were all for sailing it. Extraordinary debates were held as to how to plot our course, or keep track of where we were with varying speeds. The S.W. by W. course was for a craft making six miles an hour, but we were liable to make anything from nothing to six miles an hour. Dragged forth from early experience with geometry, we evolved the following theory: Hourly, we drew a line running S.W. by W. from our last position. On this we measured off the distance registered on the log. From this point we dropped a line parallel with the course of the Gulf Stream and measured off on that the miles per hour made by the Gulf Stream at that point. That was our position. When in calms we merely dropped the parallel. Certainly we produced an imposing design on the chart when we finished.

After some 24 hours we found we were about 50 miles from shore, and as the breeze had practically died we turned on the motor, knowing we had sufficient gas to run that far. We churned along in great style under a hot sun, watched the sun go down and the moon come up. About 9 o'clock a glow was noticed on our port quarter. We

Tom's big fish.

decided it must be Havana. Some two hours later Morro Castle light appeared. Our course was still S.W. by W. and Havana was exactly where it should have been. To say that our surprise was great is "putting it mild." We were hilarious over our success as navigators. The ghost of Magellan was on board the *Geryon II* that night. But he did not stay long. His sailor's disgust at later developments must have driven him far away.

After passing Morro Castle and the Malecon, the grimness of one contrasting with the brilliancy of the other, we noticed several fishing schooners anchored to port of us. It seemed wise to wait for daylight before running the harbor and also before passing quarantine. Spying a big mooring we made for it. What followed was my fault, unquestionably. Having run a mooring line, one end of which was fast, through the buoy I made fast, or thought I did, the free end on the windlass. We all went below for a bite of food, content with the world. Not long after a sharp squall struck. It poured and blew for a short time, causing Steve to look out the hatch. His one yell brought us on deck in a rush. It still rained in bucketfulls, but the sight of a ship's side not 50 feet away, toward which we were moving far too rapidly, galvanized us into action. Both the incoming tide and the wind were driving us toward that craft which looked like a black mountain. An anchor went over but we were at too close quarters to let out much cable and the anchor dragged. We concentrated on the schooner and managed to hold *Geryon* off sufficiently to prevent crashing our bowsprit, but it was a fast fight. Gradually we worked toward the schooner's bow, got around her mooring chains, kicked on the motor and veered cable on our dragging anchor. The latter was hopelessly entangled with the schooner's chains, but that was unavoidable. When we were a safe distance we dropped our second anchor, offering a brief prayer that it would hold. Once more we rode quietly and turned in, but from that time on I became most particular on the question of making ropes fast or tying knots, no matter what the conditions.

At our ease in Bahia Honda, Cuba.

The next morning we flew a quarantine flag cut from the yellow lining of an oilskin and soon had passed medical inspection and customs. Then we started to work on the anchor and for a time furnished no end of amusement to the fishermen, but they gave us a hand in friendly spirit. We managed to break it out from the dinghy and get it aboard and back to the ship. In a few minutes we were on our way into the harbor proper.

Since this is intended to be rather a nautical narrative than a sightseeing tour, Havana must be dealt with even more summarily than Palm Beach. Three weeks later we left, having designs on the west end of Cuba where we understood deserted harbors and jungles were to be found, along with hunting and fishing. After passing Morro we found a light breeze from the southwest, so headed out to sea in order to take as much advantage as possible of it. About noon we found we were making very little progress and that the wind, against the current, had kicked up a nasty, choppy sea that made everything disagreeable. So, having by now decided that we were out for pleasure alone, regardless of ancient civilizations, we voted to run into the yacht club harbor, hang up there for the night and start again. With a westerly wind we were well protected

off the yacht club and so we came about and drove for shore. Just after we anchored a boat put out from the club pier and swung alongside. An officer of the club introduced himself and after offering all hospitality explained that indications were all for a sudden shift of wind to the north, and that a good blow would follow. Down Cuba way, when the wind goes clockwise from east to west it is sure to wind up in the north and call it quits with a vengeance. We were ignorant of this, but more than being ignorant, we were plain bull-headed. He advised pulling out at once for Almendares River, because anchors would never hold on the hard sand bottom when breakers started piling in. We were almost condescending in our thanks and willingness to think it over. From time to time we glanced at the sky, but only casually. That overgrown zephyr from the west was just as steady as could be desired. We had a swim, then dinner, watched it grow dark and gossiped about the foibles of those who must continue in the path of traditional weather forecasting. Then the wind turned cool, the *Geryon's* stern pointed toward shore and we sat up, looking out to sea. Straight out of the north came that breeze, and how she did come. Anchors were up, motor was on and we were on our way in fast time, but we did not beat the sea that followed right after that wind. The sky was blotted out in a few scant minutes, we could not see the buoy that led out past the shoals and without anything being said we all felt we were in for another show. We were.

I had the wheel and headed the old craft in the direction where I had last seen the buoy. Tommy and Steve went forward to break out the jib as soon as we were in clear water. Somehow we had the buoy lined up, but by the time we reached it honest-to-goodness waves were hopping up and down. It was the quickest sea I have ever seen make up. Once, a young tidal wave struck, catching us just wrong and sweeping the ship. Luckily we all stayed on, although Steve and Tommy used teeth and toe nails in the shrouds. The motor coughed and sputtered angrily but finally settled down to business again. Which was equally lucky. While Tommy hauled up the jib, Steve worked on the jigger, got it clear and set. Suddenly Tommy came aft, announcing that the jib halliard block had carried away and at that moment was flying carelessly around the main truck, leaving the jib in the water. As it happened, we wanted that jib badly, because we could not set the mainsail in the wind that was tearing across from the States. Therefore, a short-time conference was held in the cockpit and we decided there was nothing to do but go aloft and capture the halliard and block.

It was my turn, so up I went. It was only a 45-foot mast, but the way it ranted about made it seem like a thousand-foot pole in an earthquake. That block had played ring-around-the-rosie with the mast and both shrouds. It had accomplished everything that one loose block could in the way of entanglement. And to hang on a quarter-inch spreader that was carving dips and parabolas through the air while working on those snarls was no simple job. At last I had it clear, after about 30 minutes aloft. I grabbed the block with both hands and slid toward deck. Whereupon it caught another snag, slipped out of my hands and went back to the masthead. I was all in, yelled for Tommy, and spread out on deck not giving a whoop if all the ocean fell on top of me. By the time Tommy got into the crosstrees, the mess was just as bad, but after another battle he brought the block down.

That jib was set with a vengeance it had never experienced before, and probably never will again. With jib and jigger we gathered headway after sheering off and it was only just in time, because we drifted inshore so far that white water was not 50 yards away. I forgot to say the motor had gone dead after a second drenching. And so we headed back for Havana, knowing it was hopeless to make Almendares River in the dark, and not caring to just sail about aimlessly in such a blow. We made harbor without much trouble and sailed right into our old anchorage.

That storm held us in harbor for three days until the wind shifted anti-clockwise to south and we made a second get-away. We had splendid sailing down the coast for two days, spending one night in a tiny harbor that was as silent as a grave. But we had eyes on Bahia Honda, so continued and cruised in a big opening that led to a spread of water over two miles across. There, just south of a great little island and fairly close to shore we anchored. Then we rigged deck canopies, cockpit tables, moved a rusty victrola on deck, along with cushions, and hung up our hats. We fished and hunted; we dined on quail, pigeon, meadow lark, yellowlegs and snipe, along with fish we did not recognize, we slept and read and swam, we sailed the dinghy on time races, but most of all we went over that ship with an inspecting eye. We were no longer now completely dumb about rigging. One month was spent there, and when we left we voted Bahia Honda one of the greatest spots that could be found.

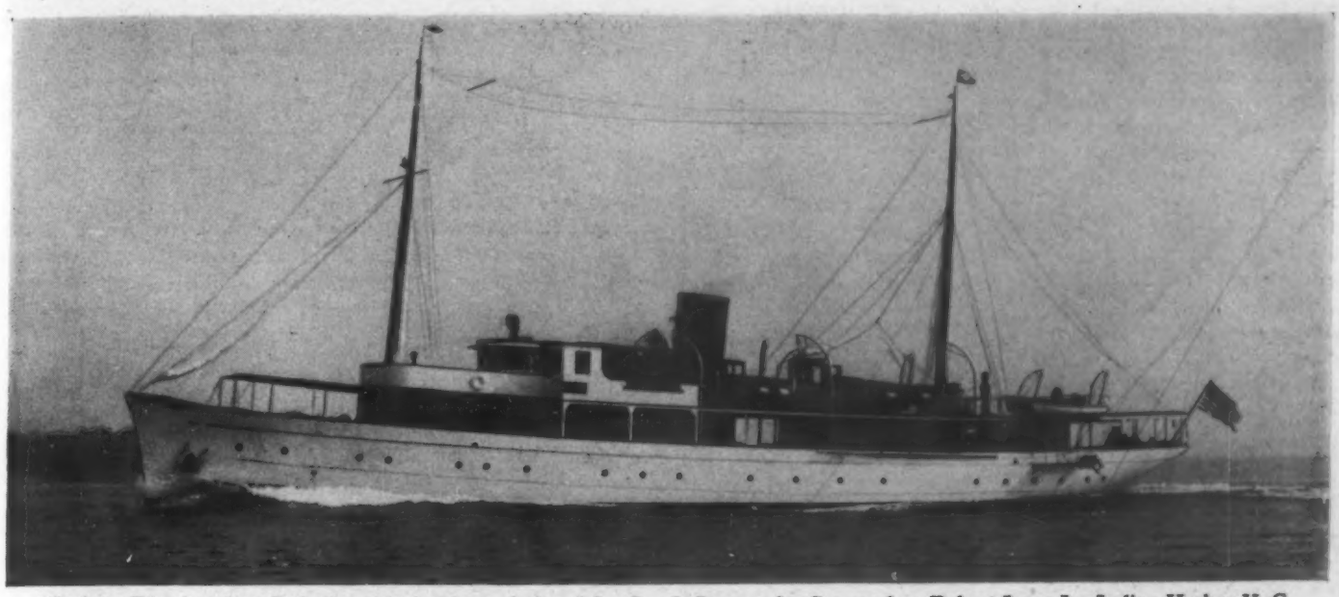
At the end of a month we had to turn toward home. New York, somehow, no longer filled the bill, but it was essential. What with evaporation and usage on the way down, we figured we had enough gas to run 15 miles. That meant sailing most of the way to Havana where we wanted to pick up a few supplies, a run under power into harbor, and then off for the States.

Our third stay in Havana was brief. Time pressed and spring was about due in New York, which is worth while, even as in Paris. With the larder replenished and the ship in great trim, we hopped for Miami. There seemed to be no reason for delaying the trip back by stopping at unnecessary places, even though they might be of interest, so we plotted a hurried cruise—Havana, Miami, Beaufort, the sounds, Norfolk, Chesapeake Bay, the canals and home. Out of Havana we met a stiff breeze out of the east. From past experience with the Gulf Stream, a due north course was considered about right to bring us off the Florida Keys, where we could pick up a light that would give us our bearings. All sail was set, and even though the wind blowing against the Stream kicked up a choppy sea, we had splendid sailing. Watches came and went, food was served with unexpected regularity, we averaged about six knots under sail, which with the Stream made a nice average, and even the cat was contented. For something more than 12 hours we headed north. About 4 o'clock in the morning, while it was still dark, we picked up our first light. It was just to port, quite where it should be, and a few minutes later we identified it as American Shoals. We had made close to 10 miles an hour during the run and had hit our mark with all the precision that could be desired. However, it no longer meant the exulting that it had several months before. Somehow, we thought it was only to be expected. On we went and arrived off Miami just as a cold fog hit us the following morning. Our speed had dropped but the sailing was fine. We stopped at Miami for quarantine and customs inspection.

Back to sea as soon as all official business was set right. The run to Beaufort was beyond words. Steady as a clock a south-east wind blew for four days. The sea was rolling just enough to let us know we were at sea. And the weather was balmy enough to permit swimming trunks as the only costume during the day. Probably such sailing should not be expected for more than four days out of every six months. But even that percentage is sufficient reward. Everything was in our favor and we were in favor of everything. Within a couple of hours of the time we had figured, we sighted Cape Romaine light, the one we had aimed for. The seabug had been biting deeper and deeper during the

(*Continued on page 86*)

Three Popular Types Showing the Trend In Power Boat Development



Off-shore Diesel cruiser *Robador*, 161 feet long, designed by Cox & Stevens for Commodore Robert Law, Jr., Indian Harbor Y. C.

Hurry-Up II, a 65-foot express cruiser developed by W. H. Hand, Jr., for C. G. Conway. A speed of 29 miles is obtained with two Sterling Coast Guard motors.

The fast runabout, as developed in this 26-foot *Chris-Craft*, with speeds up to 40 miles per hour, is becoming increasingly popular everywhere.

Photo by J. M. Collinge

The *Lloyd W. Berry* in her new home on the Pacific Coast. A deck view of the famous little schooner which crossed the Atlantic twice, in 1921 and 1922, and won in her class in the Bermuda Race of 1924, which will awaken memories in Roger Griswold and his crew. She is now named *Zingara*.

The Month in Yachting

A New One-Design Class for the Indian Harbor Yacht Club

FOR several years past the Indian Harbor Yacht Club, of Greenwich, Conn., has been extremely active in training junior members in seamanship and the handling, racing and care of small craft. Large classes of enthusiastic junior yachtsmen have received their training, passed their tests for A.B.'s, and have already formed a nucleus of keen racing sailormen who later will make valuable senior members.

Claud Worth's *Tern IV*. The jigger may make this latest of Dr. Worth's cruisers technically a yawl, but most cruising men will contend that for all practical purposes she is still a cutter.

To continue successfully this rapidly growing work, the club has formed a new one-design class of boats, suitable for youngsters of from ten years of age up. The design chosen is from the board of John G. Alden, of Boston, and is of a snappy, Marconi-rigged keel sloop 18′ 2″ over all, 14′ 6″ water line, 6′ 2″ beam and 3′ 8″ draft, the profile and lines being similar to the many other small classes which Alden has turned out. The good beam, plus the 700 lb. keel, will make a stiff, uncapsizable craft, while watertight bulkheads will make them unsinkable should the boat be filled with water, which is highly improbable. Eight boats have already been ordered from Post, a reliable builder of Mystic, Conn., and it is quite probable that several more orders will be placed in time for 1927 delivery.

Once a Sailor, Always a Sailor

THAT the world is surely a small place, and that once one has followed the sea the love of it always sticks, is apparent in the following letter from one of YACHTING'S readers in the Middle West, where an article in the November issue on Krum Bay, called up memories 46 years old in the writer. It must have been like meeting an old sweetheart to come across the figurehead of *Rosa Y. Isabella* in the pages of a yachting magazine. The letter speaks for itself:

"EDITOR YACHTING: I was very much interested in F. A. Fenger's article in the November issue of YACHTING on Krum Bay, where he mentioned the *Rosa Y.*

The little Stephens 26-foot runabout which recently made a remarkable run of 666 miles from Stockton, California, to San Diego, most of the trip being on the open Pacific. She averaged 23 miles an hour, her power plant being a Scripps Junior Gold Cup motor.

Isabella, as I made a trip in her around Cape Horn in 1880. At that time she hailed from Hamburg, was bark rigged and a fine vessel, and a fine figurehead which I noticed Mr. Fenger also appreciated. I wonder if Mr. Fenger knows when she was broken up and where she hailed from at that time. The trip I made in her was to Mazatlan, Mexico, and return and from a certain angle was an interesting trip.

Hoping to hear more of the old timers, I remain,

N. H. SJODT."

Stephens "26" Makes Remarkable Run

ONE of the most remarkable runs ever made in a small open runabout was completed recently on the Pacific Coast when a Stephens stock 26-footer, powered with a Scripps F-6 Junior Gold Cup motor, ran from Stockton, California, to San Diego, a distance of 666 miles, at the rate of 23 miles an hour. Approximately 574 miles of the trip was made in the open ocean, and despite some 150 miles of rough going, the little craft finished with dry bilges and without any motor delays of any kind. Stops for fuel and rest were made at San Francisco, Santa Cruz, Carmel, Port San Luis, Santa Barbara and Los Angeles. This trip is believed to be a record for any power driven craft of this size.

All Set for the Cuban Star Class Internationals

THE stage is set for the Star Class International Series to be sailed off Havana this month, starting January 27th and continuing through to February 4th. A large fleet of Stars is entered from the United States, and some dozen or more American Stars will show up at the starting line. The list of American Star Class skippers who are going to the Cuban capital includes Ernest Ratsey, Adrian Iselin 2nd, G. W. Elder, J. R. Robinson, C. Sherman Hoyt from New York, P. E. Edrington and J. D. Heyward from New Orleans, J. A. Dingwall, L. Bainbridge, L. Curtis, Jr., J. G. Miller, F. T. Bedford, W. J. McHugh, D. T. Starring and A. Buckley. There will be a Mid-Winter series and a series for the Bacardi Trophy, each consisting of three races, and a team race in which the American team will be made up of the four leading American boats in the Bacardi Series.

An innovation in one-design class building which the Star Class Association has recently put forth is the following:

The Association through its Chief Measurer, F. W. Teves, has perfected a multiple production system on Star frames which can now be had in complete sets with transom and stem for $44.00, riveted together, marked and ready for planking. They are sold at cost and guaranteed to be accurate within 1/8". All are inspected by the measurer before shipment. This will not only lower costs but mean more accurate building by builders. It also makes it possible for members to build their own Stars with a minimum risk of error. As spars, keels, rigging, fittings, and sails are now all standardized and available, the building of one's own boat becomes a very simple and reasonably cheap proposition.

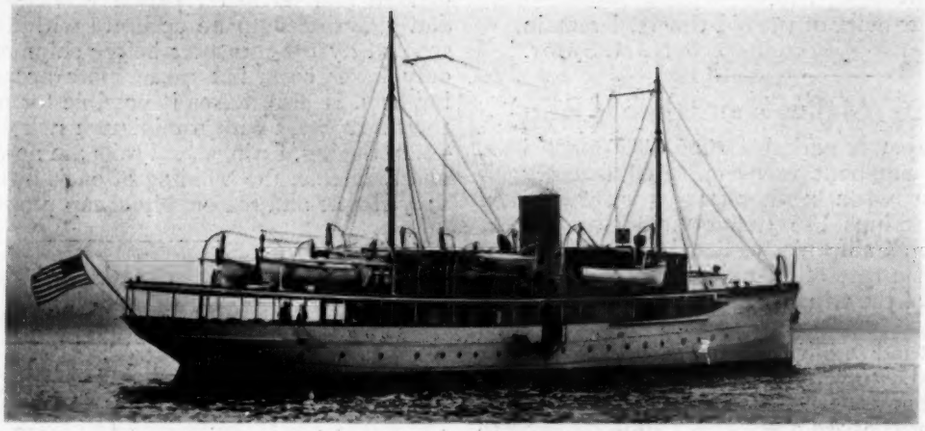
C. F Adams Heads Eastern Y C.

CHARLES FRANCIS ADAMS, America's foremost and best known Corinthian helmsmen, was elected Commodore of the Eastern Yacht Club of Marblehead at the annual meeting held on January 11th, succeeding Nathaniel F. Ayer. Commodore Adams has been actively interested in the leading classes of Massachusetts Bay for nearly forty years, and in 1920 sailed the *Resolute* in her successful defense of the America's Cup.

The Star fleet will gather in strength at Havana the end of January.

Vidor, A Large Diesel Yacht for Ocean and Coastwise Cruising

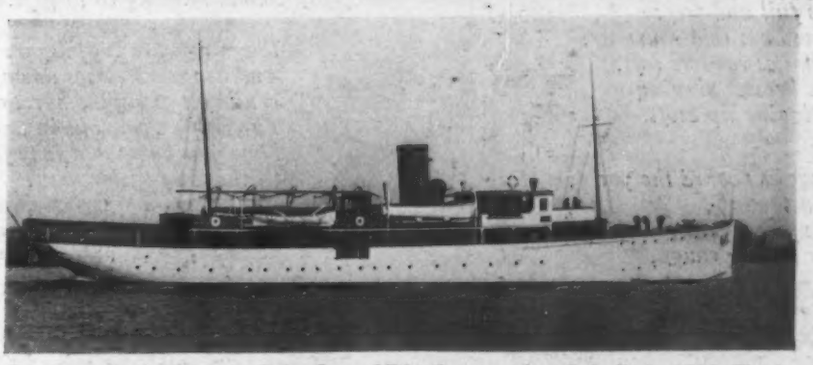
Above—The large, mahogany-paneled dining room in the forward end of the deckhouse.



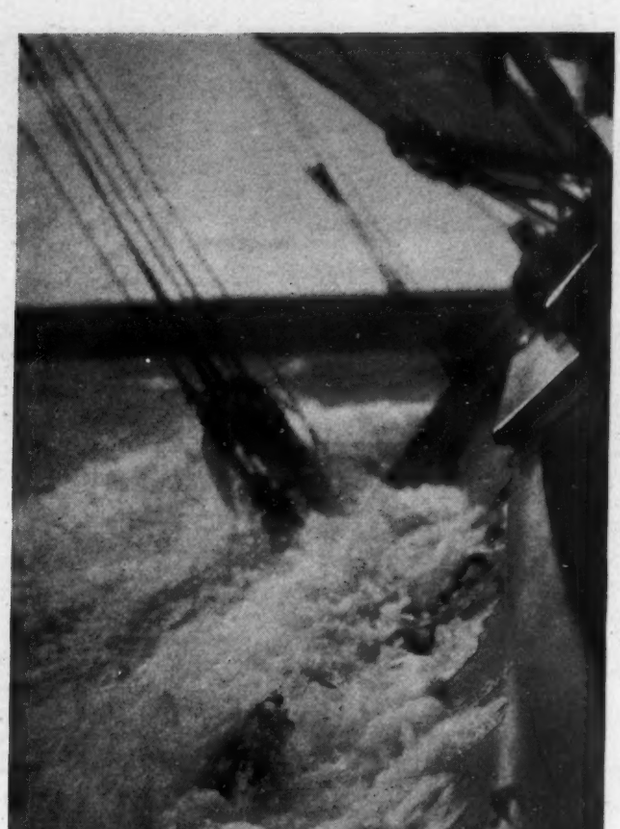
Below, left—The smoking room in the house on the boat deck. Right, the owner's stateroom.

The last large Diesel yacht to be placed in commission during 1926 was the *Vidor*, designed by H. J. Gielow, Inc., for Mr. Victor Emanuel. With a length of 171 feet, and powered with two Bessemer Diesel engines she is capable of extended ocean cruising.

Savarona, The Largest Diesel Yacht of the Year



Savarona **is the largest of the fleet of Diesel-powered craft built in 1926. She is owned by R. M. Cadwalader, Jr., of Philadelphia, the designers being Cox & Stevens. Above are shown the attractive living room (top), and the dining room in the forward end of the deckhouse.**



"The decks are wet and shining and the humming sheets are taut."

Day Dreams

THE air is soft and balmy
And there's something in the breeze
That sets a fellow dreaming
Of the lovely summer seas;
It's hard to stow your memories
And settle down at last,
For you find your anchor's dragging
And you're drifting in the past.

Across a maze of city roofs,
A vista of the sea
Recalls the happy days afloat,
When life was full and free;
The street's low hum and murmur,
Which the distance renders soft,
Sound like the breezes singing
Through the rigging up aloft.

You're back again aboard the yacht,
Your eye upon the luff,
With the salt spray coming over
And the water getting rough,
While your cares have all gone flying
Like a fog that burns away
When the sun tops the horizon
On a hazy summer day.

You watch the gray clouds scudding,
As it's coming on to blow —
The tall, white sails above you
And the long, green seas below;
The decks are wet and shining,
And the humming sheets are taut —
Then, with everything made shipshape,
She is heading in to port.

The waves are lapping on the hull
And darkness closes down,
While all along the harbor-edge
The lights shine out in town;
Now you know that lazy feeling
Of the tired sailor man,
As the bacon sings its swan song
In the good old frying pan.

ALFRED STUART MYERS.

Your Propeller

A Short Talk for the Novice on a Subject in which He Is Vitally Interested

By Austin E. Potter

Part I — Definitions and Designs

TO owners of power boats the subject of propellers is one frequently shrouded in deepest mystery. In this short series of articles my aim is to explain, in simple and easily understood terms, something of the principles underlying the advanced developed design of modern propellers, their principal characteristics, illustrating and describing a few standard types, with such information as may aid power boat owners in the selection of propellers which will give them the best that is possible in both boat and engine, in speed, freedom from unpleasant vibration and efficiency in rough water.

The principal characteristics of propellers may be set down as follows:

> Direction of Rotation; Diameter; Pitch; Pitch Ratio; Blade Area; Blade Surfaces; Blade Width; Blade Contour; Pitch Balance; Blade Spacing; Rotative Balance; Speed of Rotation; Frictional Resistance; Propeller Effect; Propeller Thrust and Propeller Slip.

In order to understand the meaning of all these terms, and their bearing on propeller efficiency, a brief description of each characteristic will be given.

Propeller Rotation: A right-hand propeller is one, the upper part of which turns to the right, or clock-wise, as one faces the bow of the boat, while a left-hand propeller rotates in the opposite direction. A large majority of four-cycle engines use left-hand propellers.

If, while facing aft in a boat, the top or upper rim of the engine's fly wheel turns clock-wise, or to the right, the propeller needed will be a left-hand, while if to the left, or anti-clock-wise, it takes a right-hand propeller. To make sure of the proper rotation it is best to follow both the above rules, in order to be absolutely certain.

Practically all two-cycle engines, unlike the four-stroke, will run equally as well in either direction. In ordering propellers very often errors are made in noting the direction of rotation.

The greatest of care, therefore, should be exercised in determining this detail beyond a doubt, for errors in this most important feature often cause exasperating delays that, with care, could be prevented.

The illustration, Fig. 1, shows a left-hand propeller on the left, and a right-hand one on the right, with the flat driving surfaces toward the observer.

Diameter: For greatest efficiency, propeller authorities for the most part seem to agree that the propeller diameter should be as large as it is possible to swing, and yet have the wheel sufficiently submerged to prevent cavitation, or the drawing of air from the surface of the water, to break the vacuum formed in front of the twisted and slightly crowning surfaces of the front of the blades.

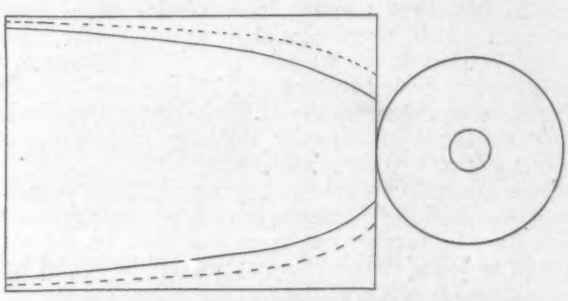


Figure II, showing expanded and projected blade area.

While this may be good theory, efficient propellers have been designed which have materially varied from this rule. It has been observed in actual practice that the effective blade area, the pitch and the contour of the blade, in addition to the shape of the hull, the amount of its wetted surface and the actual power and speed of the engine, are all controlling factors in determining the proper propeller diameter.

With a small diameter propeller the entering edge cuts the water at a much greater angle than does one of larger

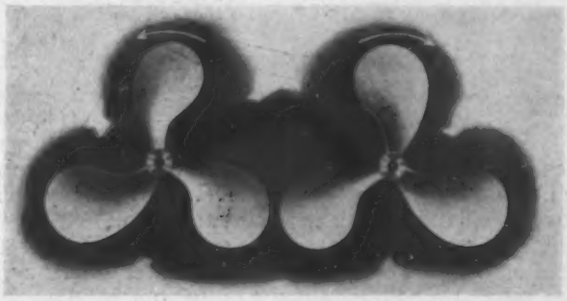


Figure I, showing left-hand and right-hand propellers.

diameter of the same pitch, and the less this angularity the greater and more direct is the thrust of the blade against the water to force the boat ahead.

This is much more apparent in low and medium speed installations which have to use higher pitch, than in higher speed applications where low pitch prevails, except in ultra-highspeed racing craft.

Pitch: The pitch of a propeller may be briefly defined as the distance it will drive a boat ahead at each revolution, providing there is no resistance or slip.

It is not unusual to liken the pitch of a propeller to a threaded bolt and nut. There is, however, a marked difference, and one that is usually not sufficiently stressed. In a bolt and nut thread the sides of the thread are of practically the same angle, while a propeller is a developed helix, unlike the bolt thread, in that the driving surface is, or should be, at right angles to the center of the shaft hole. Unlike the machine bolt with its shallow thread, it should advance, in theory, through the water at a speed corresponding to its pitch, its entire diameter.

A propeller may be either true, decreasing, expanding or mongrel pitch. If true, the pitch is the same at all distances from the shaft center beyond the hub; if decreasing, the pitch will decrease from the hub outwardly; if expanding, the pitch will increase outwardly from the hub, and if mongrel it may be any variation of the above — usually a fatuous dream.

I do not know of any recognized authority advocating decreasing pitch design, but there are adherents of expanding pitch. The principal advantage claimed for this latter type of propeller is that as the outer part of the blade naturally should do the greater share of the work, the part near the hub should rotate in fair water without exerting much, if any, pressure against the water, either

laterally or rearwardly, as a result making the vessel easier to maneuver when turning against the wheel — that is to the right with a left-hand, or to the left with a right-hand propeller.

While it is possible that a propeller might be designed having expanding pitch which would prove highly efficient, such a propeller would have to be designed for practically every installation, and from data only to be obtained from speed trials and observations of actual results with other propellers (most probably of true pitch design) in order to secure reliable data from which to make computations and intelligent measurements. The cost of the designs and patterns, to say nothing of the

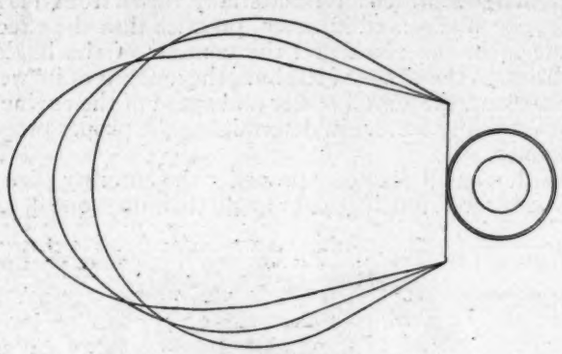


Figure III.

almost impossible truing of such propellers, probably would make their cost prohibitive, even if they were to prove as effective as their adherents claim.

Manufacturers of standard propellers believe it to be possible to secure fully equal, if not higher efficiency, with true pitch propellers, than can be obtained with any deviation from true pitch design, and their long experience in the design, manufacture, application and observance of the actual operation of propellers, should give weight to their opinion.

PITCH RATIO: It is generally conceded by propeller authorities that the paramount reason why the pitch should not be greater than the diameter, is to keep the percentage of slip low.

Fortunately, the average speed of marine engines is higher today than a few years ago, and as a consequence propellers are, in the main, well within this ratio, except in rare instances, where shallow draft boats of the racing type have to be equipped with small diameter propellers. In such cases propellers are specially designed to reduce the percentage of slip to the minimum, even with a higher pitch ratio.

Broadly speaking, it is better to be within this ratio, in order to secure a higher percentage of projected to expanded blade area, as hereafter explained under the heading Blade Area.

The pitch ratio is usually expressed as follows: Pitch one-half the diameter, .5; three-quarters, .75; equal, 1.0; one and one-quarter, 1.25; etc.

BLADE AREA. The expanded area of a propeller blade is the actual area of the surface of the blade on its flat or driving side. The projected area of a blade is always less than its expanded area, for the reason that in action the blade pushes against the water at an angle decreasing from the hub as the diameter increases. The projected area is the area of the surface actually forcing the boat ahead.

To demonstrate: Let us suppose a blade to be of 6 inches uniform width its entire length, the propeller diameter being 20 inches, and that of the hub 4 inches. The expanded area of the blade would be $10-2\times6=48$ square inches, while if it were 20-inches true pitch, the projected area would be much less. In the illustration, Fig. 2, the space within the outside solid lines shows the expanded, and the space within the dotted lines, the projected area, which latter is approximately 40 square inches, or about 83 per cent of the expanded area. In like manner the inside heavy lines represent 30-inch pitch, with the same diameter, the projected being some 73 per cent of the expanded area, or considerably less than at 20-inch pitch.

From which we may deduce the broad fact that the greater the ratio of the pitch to the diameter, the less will be the resulting proportion of projected to expanded blade area. Conversely the lower the ratio of the pitch to the diameter the greater will be the proportion of projected to expanded blade area.

When replacing a high pitch propeller with one of lower pitch ratio it may necessitate the reducing of the blade width as well, in order to get the same amount of projected, which in reality is effective area.

BLADE SURFACES: Experience has demonstrated that a perfectly flat driving surface is the best shape for a propeller blade. For this reason, practically all modern propellers on their driving surfaces are perfectly straight at every part in a line at right angles to the shaft. This condition can only exist if the pitch is true.

Some designers have produced concave, curved or even cupped driving surfaces, only to have their hopes of improvement shattered. The addition of a rim to prevent water from being forced outwardly from a true streamline has been found to be a decided disadvantage in practice, rather than an improvement.

The blade is made as thin at its outer end as practicable, and gradually thickened towards the hub for necessary strength. The edges of the blade are thin, and bevel from the flat driving side, thus producing a slightly crowning surface to the front of the blade, rather than to the rear or driving surface.

Propellers, except in very large sizes, usually are

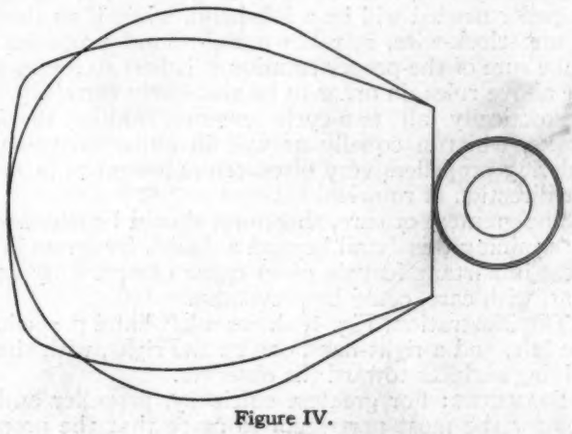


Figure IV.

ground smooth and carefully polished and buffed to reduce the frictional loss to the minimum.

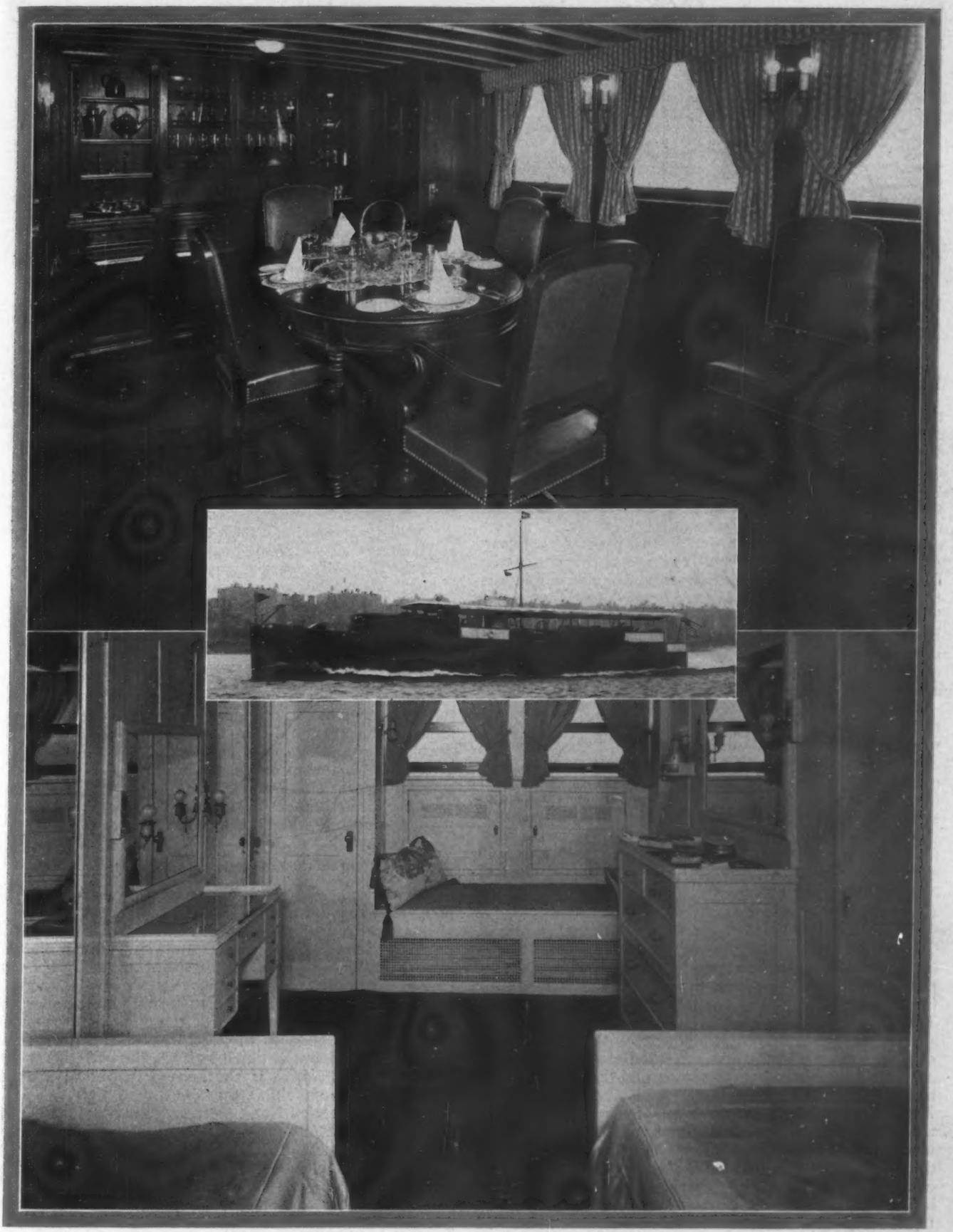
Stock propellers usually have blades of a standard maximum width, proportional to the diameter, running ordinarily from 25 to 40 per cent of the diameter, the average being probably around 33⅓ per cent.

It follows quite naturally that the wider the blade the greater the blade area usually, although the contour of the blade is a factor to be considered.

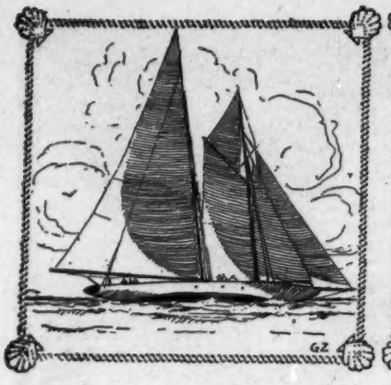
While in some cases the maximum width is at approximately one-half the diameter, in certain types the greatest width may be further out from the hub. In the section devoted to blade contour and types will be found further information on blade width and distribution.

(*Continued on page 94*)

The New Fast Coastwise Cruiser *Avalanche*



For a fast power yacht only 100 feet in length *Avalanche* shows a surprising amount of room and comfort. Owned by Anson W. Hard, of New York, *Avalanche* was launched last Autumn from the yard of her designers and builders, the Consolidated Shipbuilding Corp. With two 300 h.p. Speedway engines she has a cruising speed of 17 miles per hour. The reproductions show the dining saloon in the deckhouse, and the owner's cabin.



Yachting

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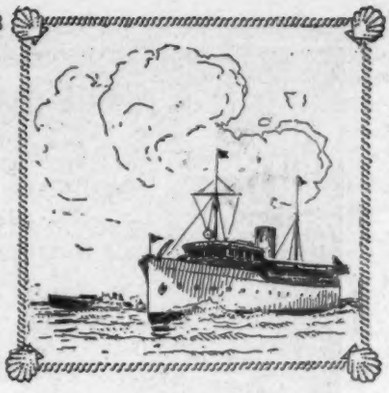


Editorial

The Motor Boat Show

THE annual Motor Boat Show, held in New York, has become an institution. To the yachtsmen throughout the country the Show means something more than merely an exhibition of boats and engines. To them it means an opportunity to study intensively the development in boat and engine design; to meet and exchange ideas with yacht designers and manufacturers of National prominence on the subject in which both are vitally interested, one as the user and the other as the maker, and to renew acquaintances with yachtsmen from all parts of North America, to whom the Show is always a magnet whose force they cannot resist. Without these annual exhibits the tremendous development in the yachting field would not have been possible. It is for these reasons that the Motor Boat Show has grown in popularity to the point where it is, perhaps, the biggest single feature in the yachting year, not only to the industry, but to the practical yachtsman as well.

Never in the history of the sport has there been as much interest in boating as there is at present. Never were as many persons anxious to take their recreation afloat. It is our firm belief, backed by over twenty years of observation, that we are at the threshold of the biggest forward movement that yachting, both under power and sail, has ever seen. The success of the Show this year has thus added significance. And those with the vision and the ability to meet the growing demands of the sport will not only assist in this growth, but will ride the crest of an ever increasing wave.

Is the Schooner Rig on the Wane?

It begins to look as if the vogue of the schooner rig, as far as small and medium sized yachts are concerned, is passing. There are signs that the pendulum, having swung far to one side, is about to start in the other direction. There is, of course, a reason for this — there are in fact several reasons. In the first place the enthusiasm for the small schooner when it first appeared after the war, ran away with judgment in many cases, and the rig was put on boats entirely too small for "two-stickers." Efficiency was frequently sacrificed for "ease of handling" in boats where a single mast rig would have been better and would have entailed no difficulty in handling. But the development of the jib-headed rig is, probably, the chief cause of the swing back from the schooner, while in the larger yachts the complicated staysail rig has also been a big factor in the change of sentiment.

The jib-headed rig does not lend itself particularly well to the cruising schooner as it means a loss of sail area in the principal driving sail unless an abnormally tall mast is carried, which is not desirable in a strictly cruising yacht. On the other hand, the jib-header does eliminate many of the faults of the ketch rig and is being applied more and more to the ketch and the yawl. The principal defect of the old ketch rig was the inability to keep the gaffs from swinging out, which made it a poor windward rig. This is overcome with the jib-header, and a much closer-winded boat is the result, with the largest sail all inboard and easier to handle than with several feet of it sticking out over the transom. A well-balanced ketch is also a much easier steering boat than the schooner. So this year we are seeing a decided swing back towards the ketch as a strictly cruising boat.

In the racing classes, the staysail rig between the masts of the modern schooner is undoubtedly responsible for its loss of favor. This rig turned out to be far from the simple proposition its early advocates claimed. It meant, often, three or even four sails taking the place of the single foresail, all but one of them set flying, and it required a larger crew to handle them and more hard work, with difficulty in getting the sails to "stand" properly. It is no wonder that the owners of the larger schooners are now talking jib-headed sloops, and that the tendency is towards the simpler rig and smaller crews that the single-stick "Marconi" makes possible. There is no doubt that the staysail rig was closer-winded than the gaff foresail, but its other disadvantages apparently outweigh this advantage. At any rate, that's what is now happening.

Score a Point for the International in the Rules Controversy

In the recent controversy over measurement rules the point that seems to be chiefly stressed by the advocates of our present Universal Rule is the fact of the advance made in yacht design over the boats built under the old waterline-sail area rule, in use prior to 1905. This, of course, is obvious. No one denies that the present models, as boats, are superior to the flat "sleds" built under the previous rule. But that is beside the point. The question is, are they as good as they ought to be, and does the present rule allow too much latitude for extreme or unwholesome hull form. If the boats can be still further improved, why shouldn't they be?

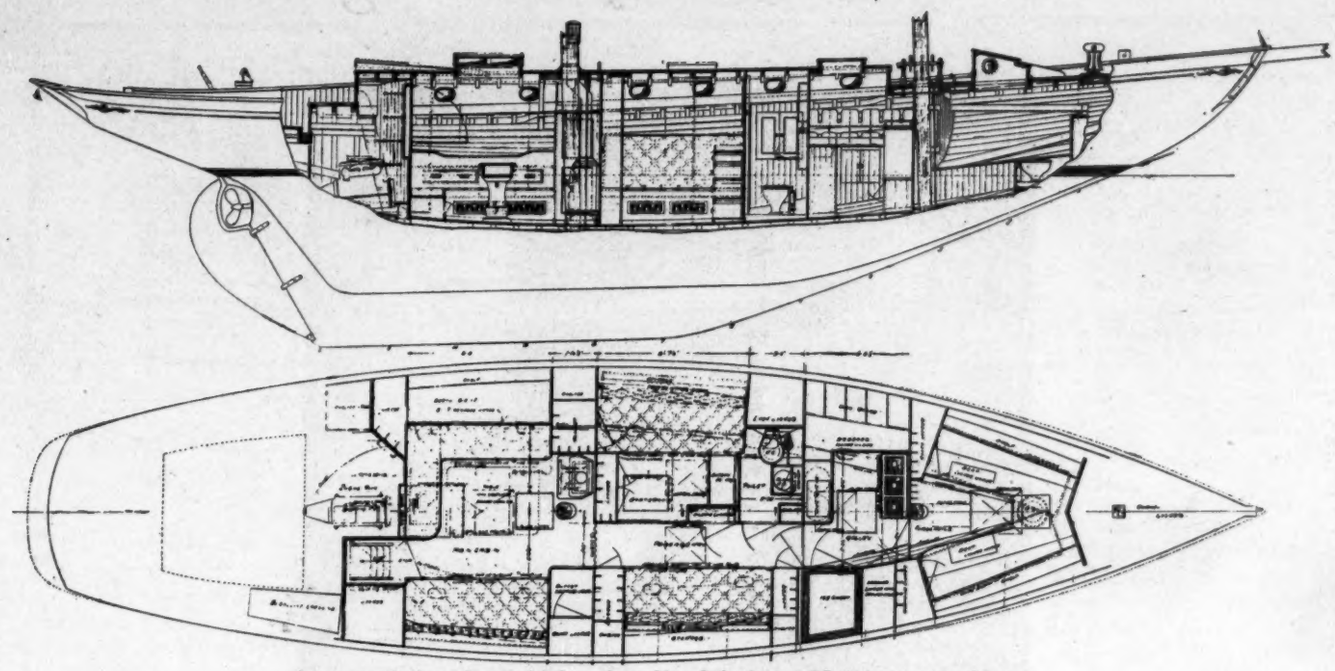
In this connection N. G. Herreshoff, maker of the present American Rule, pays a tribute to the International Rule in his article of last month, when he says that in that rule "the elements of design are tied up in such a way that it is difficult to design a poor yacht," though he claims that it is also difficult to improve the type under the rule. But is it? It looks to us as if the type of yachts built here and abroad under that rule are being improved constantly. Certainly owners building new boats will be pleased, if they can be assured that they will not be handed a "lemon."

In the World of Yachting

L. GORDON HAMERSLEY

AMONG those yachtsmen who are apparently divided in their allegiance between sail and power and who "get a kick" both from the tug of a tiller and from a mile-a-minute speed on the water, is L. Gordon Hamersley, the owner of the epoch-making flyer "Cigarette IV." First coming into prominence some dozen years ago when he owned and raced the sloop "Okee" in the 30-Foot Class, and later the "Acushla" in the N.Y.Y.C. 50-Foot Class, which he owned and sailed from 1917 to 1920, he has, since then, owned many yachts, both sail and power. In 1920 he made his first real venture in speed boats with the high-stepper "Cigarette," a fast cruiser. Since then he has had four speed-boats of that name, the last being the "Cigarette IV," a picture of which will be found facing the title page of this issue of YACHTING. *She was the first successful racer to be built entirely of duralumin, and in her he won the President's Cup at the 1926 regatta on the Potomac River with a speed for the course of 55 miles per hour.*

One of his early sailing yachts was the 21-footer "Loafer." Some two years ago he built the cruising schooner "Countess," and in her he sailed in the Gloucester Race of 1925 and the Bermuda Race last year. In the latter event he left his paid hands ashore so that "Countess" would be eligible for the all-amateur cup, which he won. His yacht club affiliations include membership in the New York Yacht Club and the Seawanhaka-Corinthian Yacht Club.



Accommodation plan and inboard profile of the latest *Malabar* type schooner.

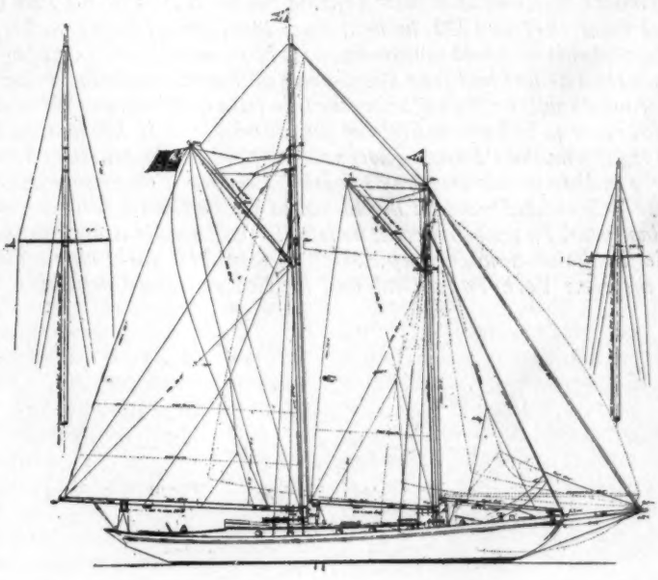
Malabar VIII, John Alden's New Schooner for 1927

So successful was his well-known schooner *Malabar VII*, that John G. Alden has decided to build a very similar model for the season of 1927. The plans of the new boat are shown herewith, and she is now under construction at the yard of Hodgdon Bros., East Boothbay, Maine, and will be ready for early spring delivery. The dimensions are: l.o.a., 54′ 5″; l.w.l., 39′; beam, 12′ 8″; draft, 7′ 4″; sail area, exclusive of topsail and fisherman staysail, 1464 sq. ft.

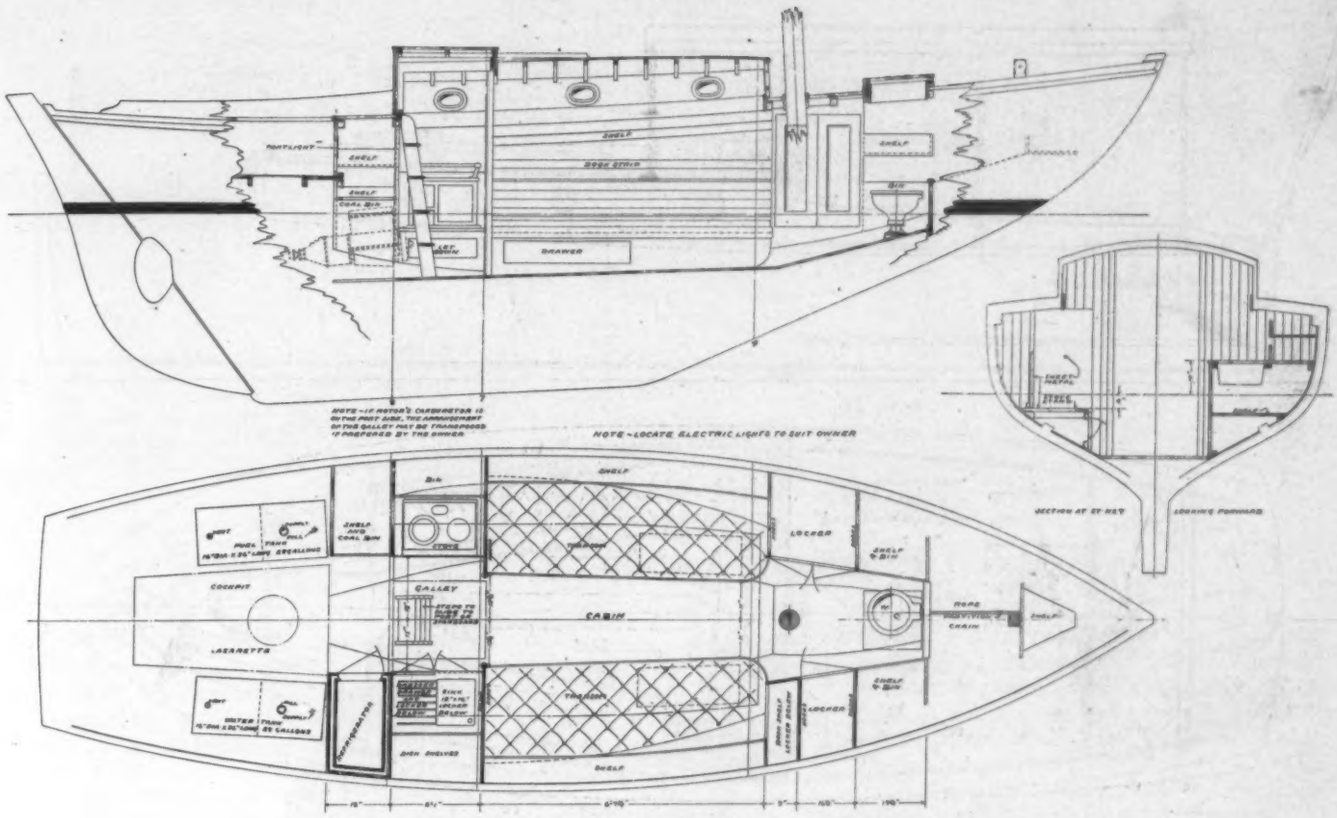
The new *Malabar VIII* follows closely the lines of her predecessor, with such changes as a hard season of cruising and racing indicated would produce a better all-around boat. The over all length is practically the same, but the water line length has been increased one foot. The depth of hold is three or four inches more, which, with the longer water line, means more displacement. Using the same ballast as in her older sister, she will therefore have several inches more freeboard throughout. The bow overhang is a bit shorter, giving a sharper section, a benefit to windward, though of little advantage in reaching or running. Both boats are ballasted alike — 15,000 lbs. of iron outside, and about 5,000 lbs. inside.

Regarding the rig and cabin plan, Mr. Alden says: "I gave *Malabar VII* a jib topsail and tall foremast for the Bermuda Race, as sail was not taxed. This served its purpose very well, but for coastwise cruising a simpler rig would be preferable, and I have therefore raised the foremast on the new boat about two feet, and done away with the jib topsail. Unless I have a schooner that will sail well under fore-staysail, foresail, and whole mainsail, and besides this sail to windward under forestaysail and foresail, I do not want one. To my mind, this is the reason for having a schooner, although I admit there are very few in existence that perform satisfactorily this way. I like to get the jib off in bad weather before it is too late, and also believe a large foresail is most essential. Therefore, on the new boat I have moved my mainmast about a foot and a half farther aft, leaving the foremast the same distance abaft the stem as last year. I have also raked my spars a little more, the result being that the foresail is considerably larger. This also serves to reduce the area of the mainsail, which is smaller than I had last year.

"Rather as an experiment, I have placed my stateroom forward of the main cabin, and have also two berths in the passageway alongside of it, so that there are comfortable accommodations for seven aft. The toilet is placed between the stateroom and galley, quite out of the way, and the noise of the cook, with his stove and pots and pans in the early morning will then be not so noticeable.



"There are more cubic feet of floor space with this layout than with the conventional layout with the stateroom aft, and I have been able to further increase the size of my engine room, galley, and forecastle. The Scripps motor will develop a speed of close to 8 miles an hour. An open grate stove will be installed at the forward end of the main cabin, which will be thoroughly appreciated in spring and fall cruising, as in this position both cabin and stateroom will be warm and dry."



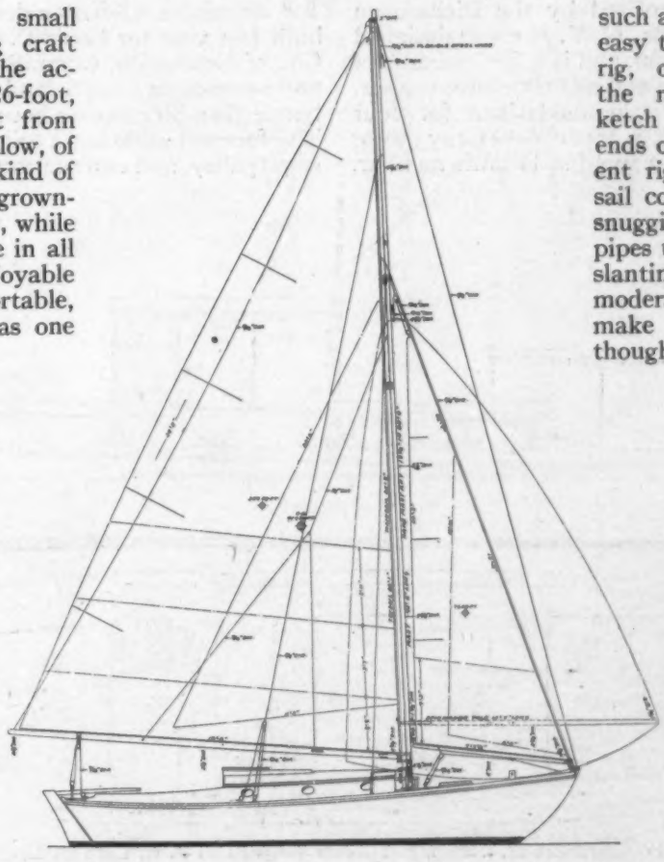
Plans of a little 26-foot Auxiliary Sloop designed by Ralph E. Winslow.

A 26-foot Single Handed Auxiliary Knockabout

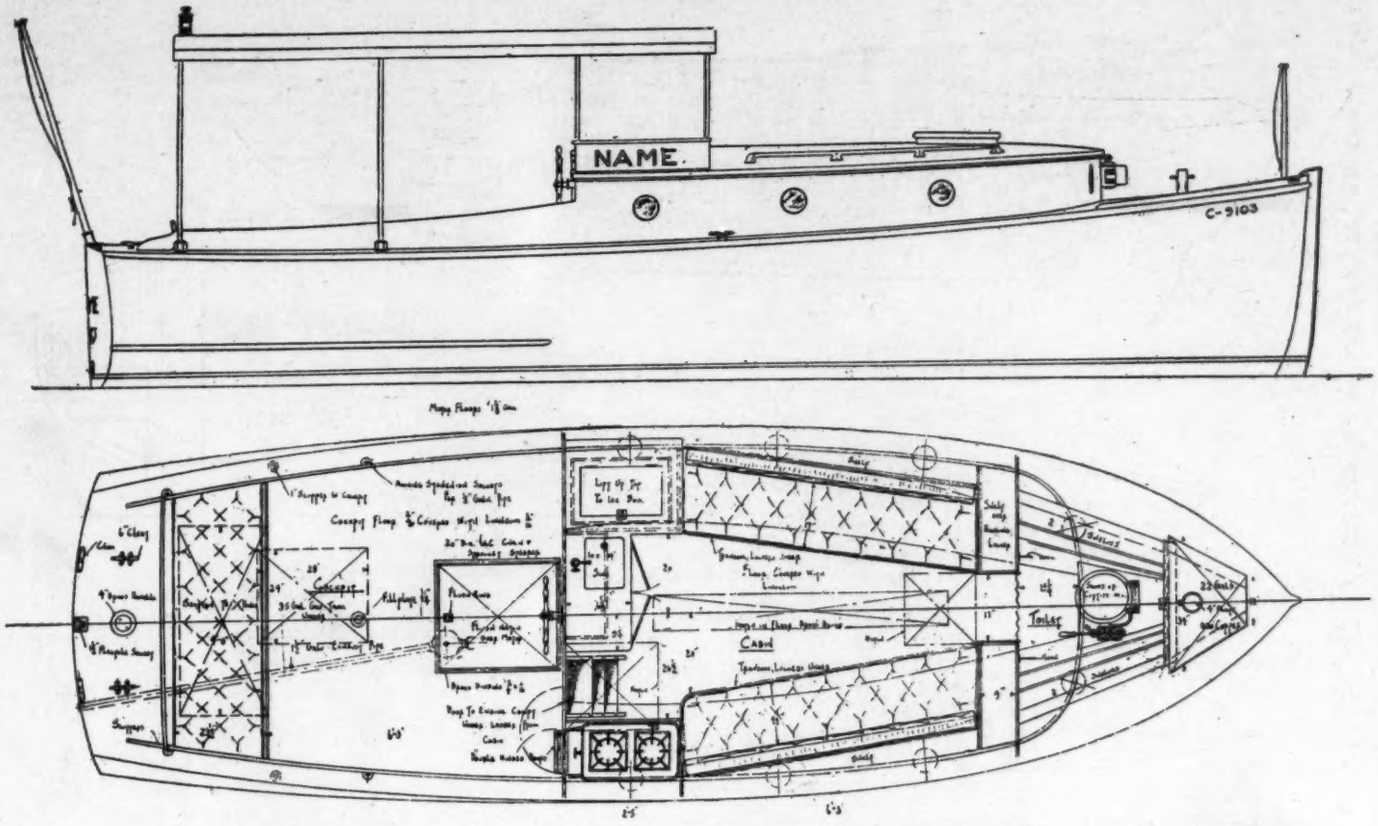
ANYONE interested in small single-handed cruising craft will do well to examine the accompanying plans of a 26-foot, Marconi-rigged knockabout from the board of Ralph E. Winslow, of Atlantic, Mass. This is the kind of boat which youngsters and grown-ups alike will appreciate; for, while she is small, she is complete in all the features necessary to enjoyable cruising, and is as able, comfortable, and easy handling a craft as one could well desire.

The dimensions are: l.o.a., 26′ 10″; l.w.l., 21′; beam, 8′ 1′; draft, 4′ 5″; sail area, 414 sq. ft. The 3,250-pound iron keel, combined with the watertight self-bailing cockpit, ensures a stiff, uncapsizable craft which should be comfortable in a seaway, yet easily driven either under sail or power.

The designer decided on the Marconi knockabout rig on account of its efficiency, and believes that on such a small boat it will be just as easy to handle as a yawl or ketch rig, owing to the simplicity of the rigging. Either a yawl or ketch rig would extend beyond the ends of the hull, whereas the present rig is all inboard. Numerous sail combinations may be had for snugging down when the weather pipes up. The long keel, with deep slanting after lateral plane and moderately cutaway forefoot should make a steady steering craft, though the lateral plane is so shaped that she should be reasonably quick and sure in stays.



The cabin plan shows an abundance of room, with sleeping accommodations for two, or three at a pinch. There is a finely equipped galley, toilet room in forepeak, and plenty of storage drawers, lockers, shelves, bins, etc., for personal articles, clothes, galley stores, and ship's gear. The cabin headroom is 4′ 10″, and the cockpit 6′ 6″ long.



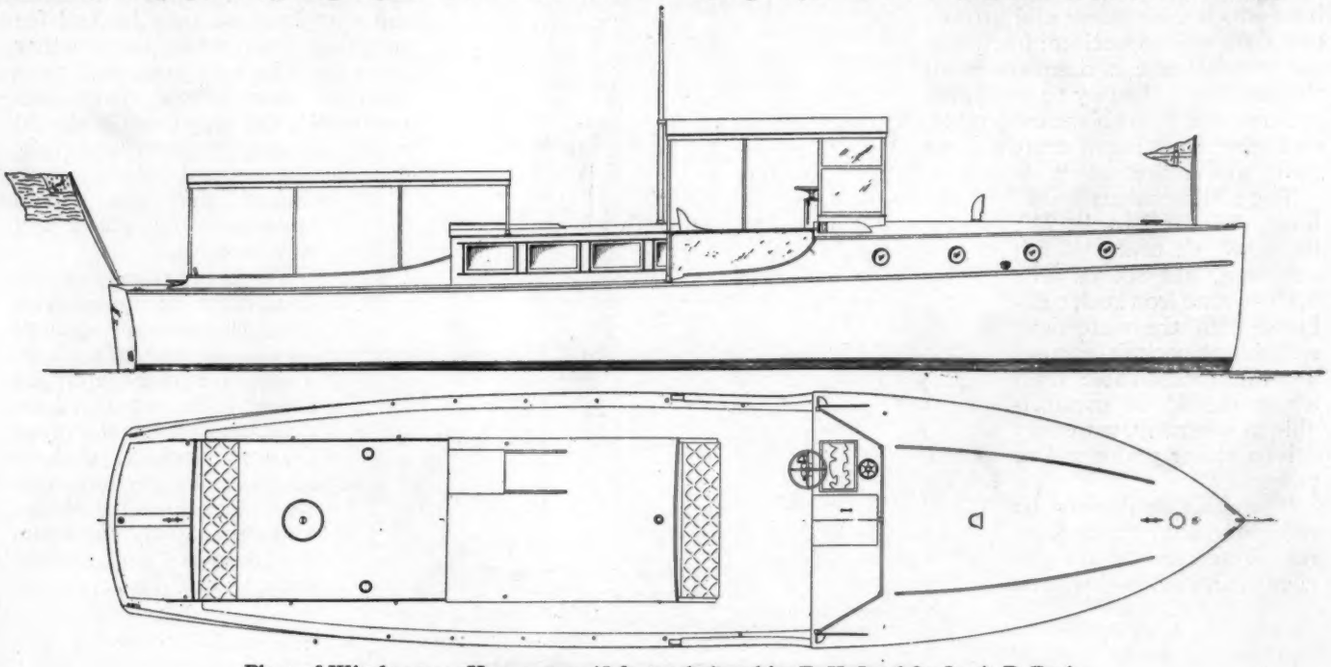
The new Richardson standardized 26-footer, designed by Eldredge-McInnis.

The Richardson 26-foot Cruisabout

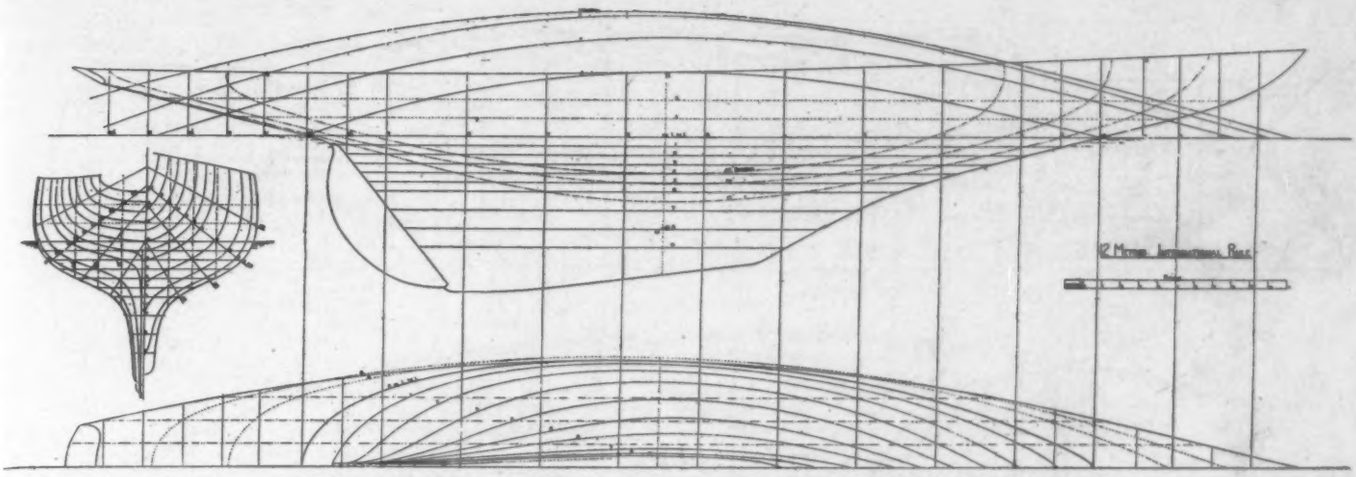
THE plans above are of a decidedly attractive 26-footer now being standardized by the Richardson Boat Co., of North Tonowanda, N. Y. She was designed by Eldredge-McInnis, of Boston, and is a fine example of a small, but able, comfortable and sightly motor cruiser. There are excellent cabin accommodations for four people, toilet room, galley, etc. A Model 6-40 Gray motor is standard equipment, giving a speed of 11 miles an hour.

Windermere II

BELOW are shown the plans of *Windermere II*, an attractive 45-footer designed by F. K. Lord and built last year for Louis P. Bach by the Ruddock Boat Co., of Greenwich, Conn. She is a day cruiser for use in any weather on Long Island Sound, and shows a speed of better than 30 miles an hour with a 300 h.p. Fiat motor. The forward cabin has a toilet compartment in the bow, a small galley, and two transoms, clothes locker, bureau, etc.



Plans of *Windermere II*, a snappy 45-footer designed by F. K. Lord for Louis P. Bach.



Lines of 12-meter yacht designed under the International Rule by Alfred Mylne.

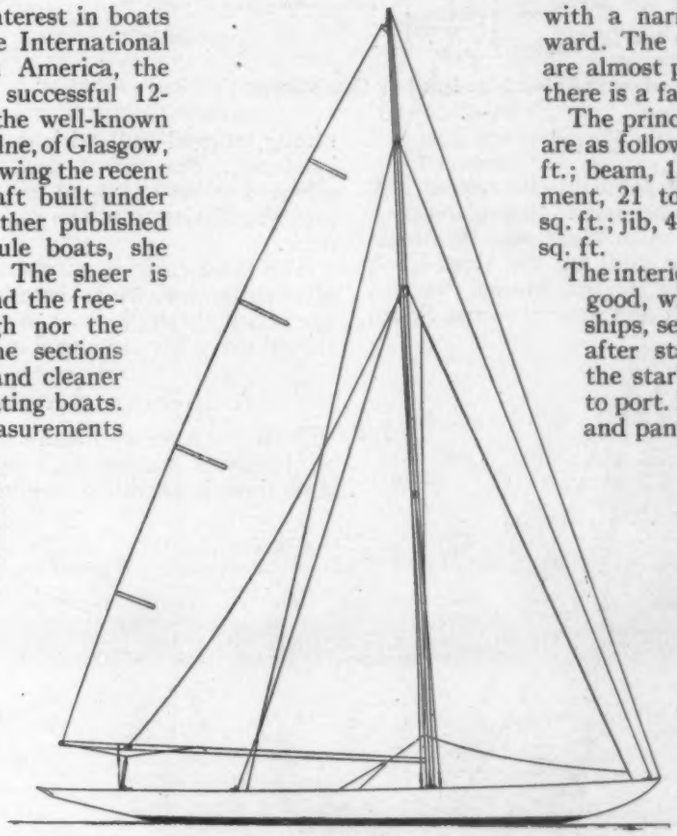
A British 12-Meter Yacht Designed by Alfred Mylne

WITH the growing interest in boats designed under the International Rule both abroad and in America, the accompanying plans of a successful 12-meter Yacht designed by the well-known Scotch designer, Alfred Mylne, of Glasgow, are of great interest as showing the recent development of foreign craft built under the rule. Compared to other published plans of International Rule boats, she shows many differences. The sheer is moderate and sweeping, and the freeboard does not seem high nor the ends particularly long. The sections show a rather hard bilge and cleaner garboards than in many rating boats.

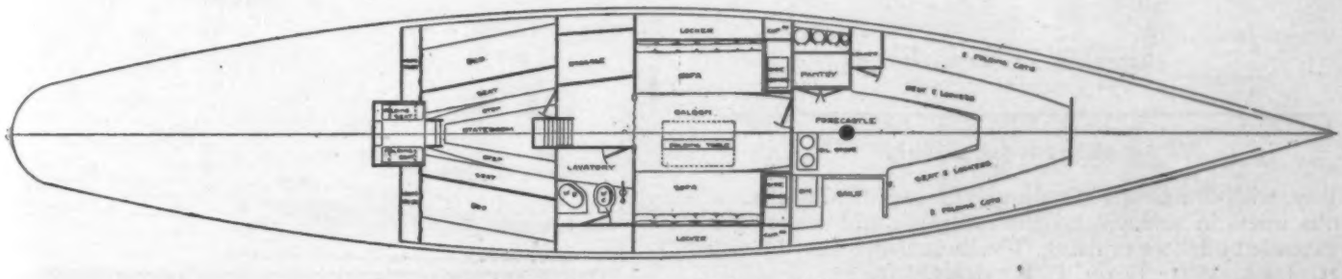
The effect of the girth measurements in the International Rule, which have been criticized in this country, are plainly seen in both the forward and after sections, which are decidedly U-shaped, with a narrow deck line, especially forward. The topsides both forward and aft are almost perpendicular, while amidships there is a fair amount of tumble home.

The principal dimensions of this Yacht are as follows: l.o.a., 66.2 ft.; l.w.l., 42.5 ft.; beam, 12 ft.; draft, 8.4 ft.; displacement, 21 tons; sail area, mainsail, 1,503 sq. ft.; jib, 473 sq. ft.; total sail area, 1,976 sq. ft.

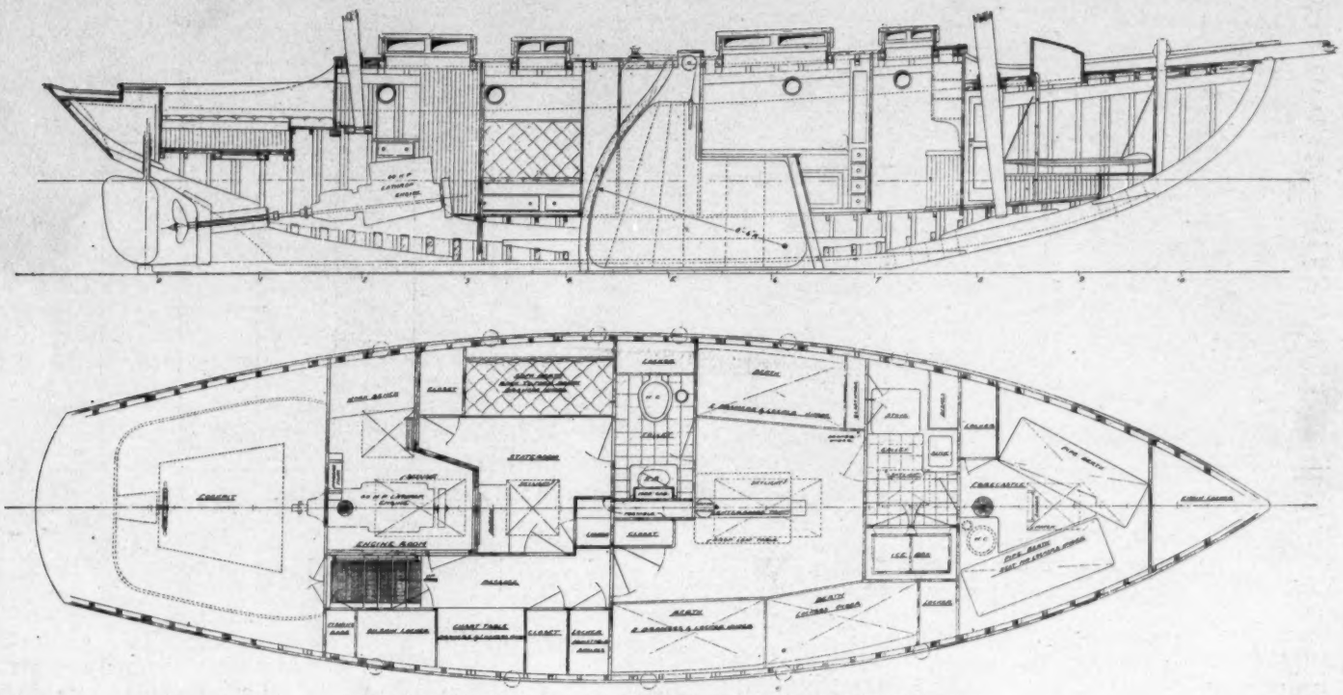
The interior accommodations seem fairly good, with a large main saloon amidships, separated from the comfortable after stateroom by a toilet room on the starboard side and baggage locker to port. Forward there is a good galley and pantry, sail locker, and forecastle showing berths for four men. The rig is all inboard, and in spite of her size she should be handled comfortably by a small crew.



Sail plan.



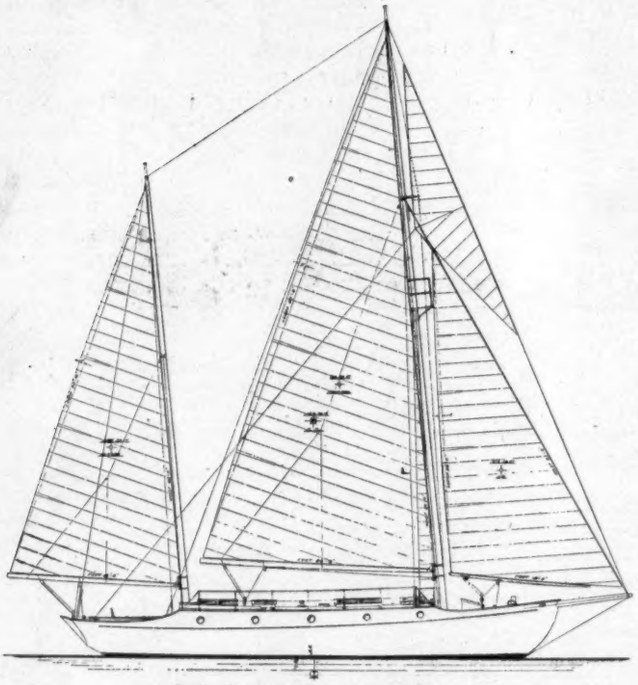
Accommodation plan 12-meter yacht designed by Alfred Mylne.



A shoal draft ketch designed by Cox & Stevens for Bache Whitlock.

A Shoal Draft Ketch

A SHOAL draft, jib-headed ketch of the raised deck variety is shown in the accompanying plans of a craft designed by Cox & Stevens for Mr. Bache Whitlock, of New York, and now being built by the Reed-Cook Construction Co., of Boothbay Harbor, Maine. She was designed principally for use in and around Great South Bay, with draft kept low enough for negotiating the various inlets in safety, and the hull able and seagoing for extended offshore cruising. The dimensions are: l.o.a., 53 ft.; l.w.l., 44 ft.; beam, 15 ft.; draft, 4 ft.



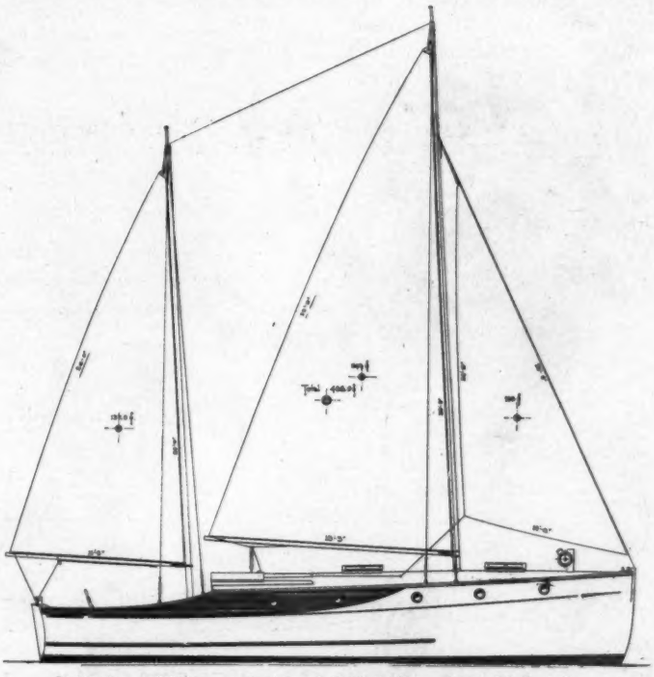
Sail plan of 44-foot auxiliary.

The design has been most carefully developed and a strong, rugged hull with good seagoing lines has been produced. The raised deck type of construction was adopted as best adapted to give ample headroom, excellent ventilation, and the maximum amount of space on deck.

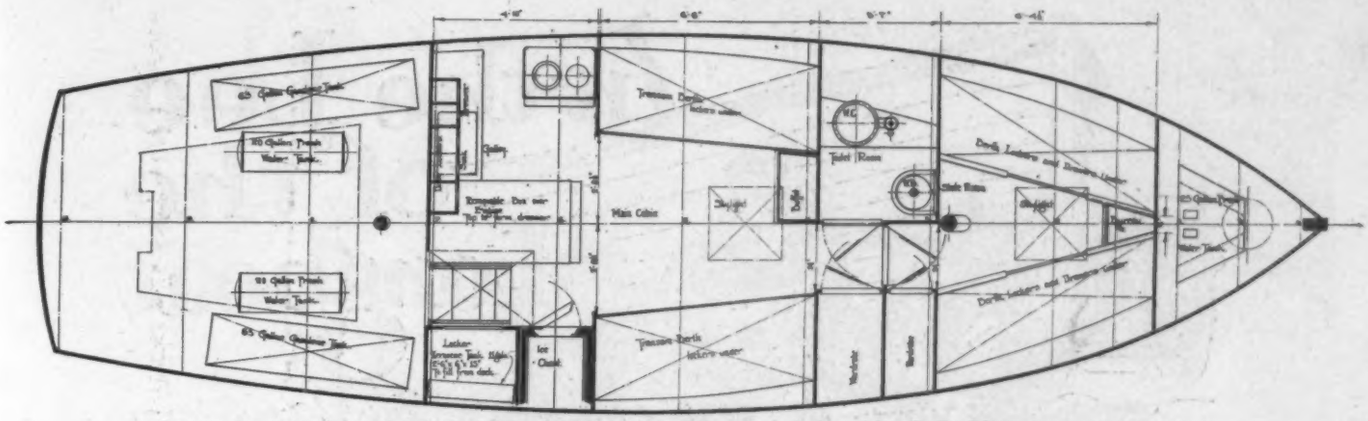
The main cabin is spacious and comfortable, as is the after stateroom, while there is excellent locker and stowage space throughout. A 4-cylinder, heavy duty motor should drive her close to 8 miles an hour.

A 38-Foot Auxiliary Power Boat

FOR the man who wants the room, comfort, and certainty of making port on schedule, and who, at the same time, is unwilling to give up sail entirely, the plans



Sail plan of Mower-designed "50-50" cruiser, 38 feet long.



Accommodation plan of 38-foot "50-50" cruiser designed by C. D. Mower.

of the "50-50" cruiser on this and the next page are sure to make a distinct appeal. The design is from the board of Charles D. Mower, of New York, and the boat is now under construction at the Milton Point Shipyard, Rye, N. Y. The dimensions are: l.o.a., 38'; l.w.l. 36' 6"; beam, 11' 4"; draft, 3' 9".

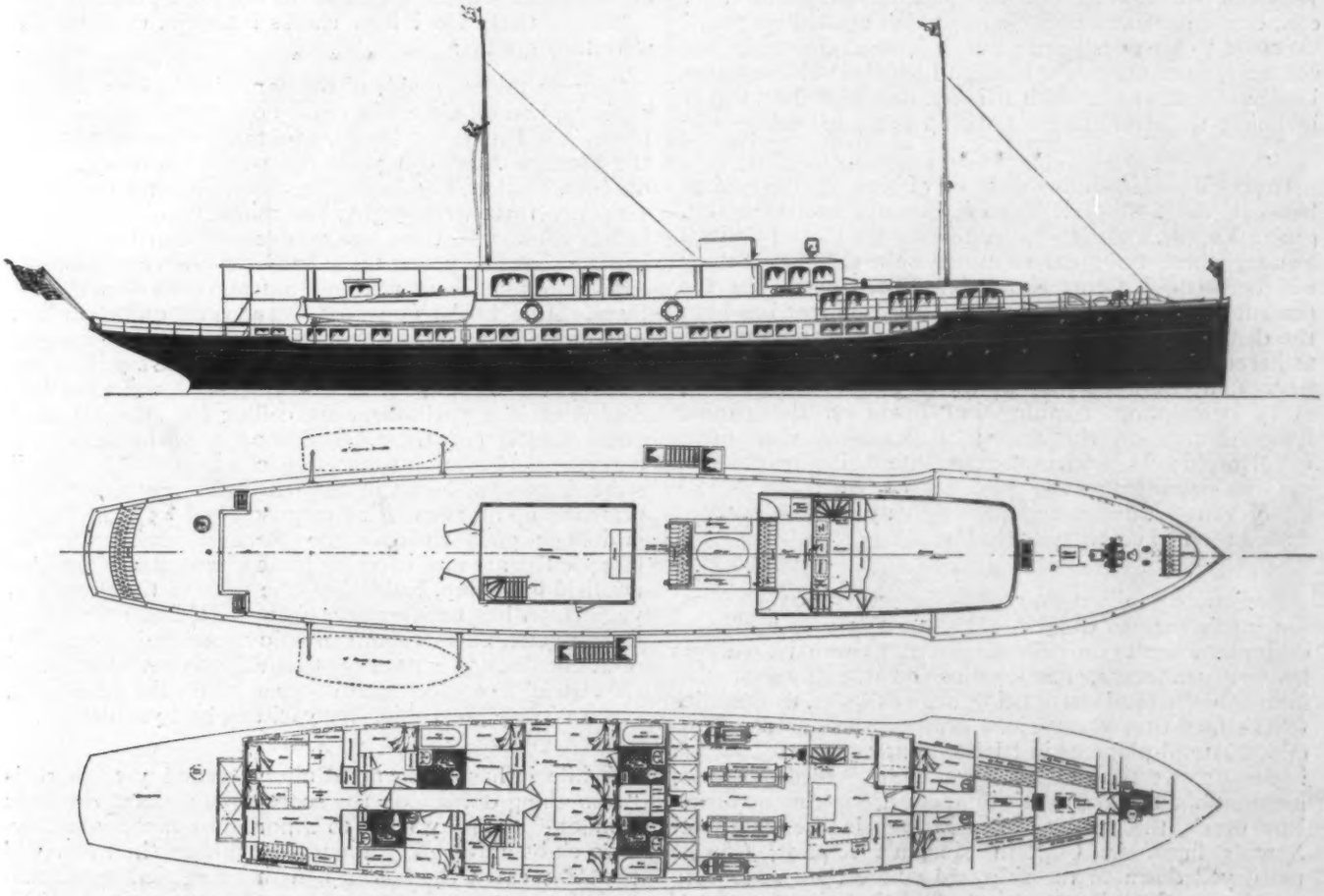
While primarily a raised deck power boat, her ketch rig of 485 sq. ft. will enable her to make port in case of engine trouble, and will be of material benefit in making long runs. She is a craft which can be run without a paid hand, and can be managed single-handed when necessary.

The double cabin layout makes an ideal arrangement for a "two-couple" cruising complement, and when owner and wife are cruising alone the forward stateroom will be used, so that the main cabin will not be disturbed by making up berths on the transoms.

She will be fitted with a 4-cylinder, heavy duty Palmer motor, which, judged by results in other similar boats turned out by the same designer, should give her a cruising speed of 10 miles an hour.

A Luders Seagoing Cruiser

THE plans below show a handsome twin-screw seagoing yacht designed and now being built by the Luders Marine Construction Co., of Stamford, Conn., for Howard Coffin, Esq., of Detroit. She is in some respects an enlarged *Sea Dream*, with all the latest improvements. The dimensions are: l.o.a. 124 ft.; l.w.l. 113 ft.; beam, 19 ft. 6 in.; draft, 4 ft. 10 in. Two 8-cylinder Winton gasoline engines of 350 h.p. each are expected to give a cruising speed of 15 and extreme speed of 17 miles.



Plans of a 124-foot power yacht designed and building by the Luders Marine Construction Co. for Howard Coffin.

In the Lee of the Longboat

by Cap Stan

MR. DOUGLAS URRY, who collaborated in the design of those two attractive and original craft, *Nonsuch* and *Coggette*, has a new slant on the wire rigging question. "Why galvanize?" asks Mr. Urry. "Why not make it of non-corrosive steel alloy? It would then stand a little surface and internal wear without letting the rust get a start. This kind of steel is as strong as most, is, I think, fairly cheap, is made into guns to mount on submarines, table knives to cut up vittles, and sheet piling to wrap around poles in the ground. Why not wire? Why not turnbuckles? Why not . . . etc., etc? Give someone a chance to get started on this."

Seems to me Mr. Urry's hunch is a good one. If, for some reason or other, the idea isn't feasible, will someone kindly tell us why? And if it is feasible, how long will it be before the steel makers wake up to a good thing?

* * *

If you're within hailing distance of New York any time between the 21st and 29th of January, hop a rattler, grab a Yellow, and set your course for the Grand Central Palace, where the greatest motor boat show in history will be moored. Other shows have been good, but the present one will eclipse all others. For, so great has been the demand for space three entire floors, instead of two as heretofore, will be given over to the display of boats, motors, accessories, and up-to-the-minute gadgets of every description. Nothing but boats on the ground floor. Motors on the second. Accessories, magazines, naval architects, and numerous interesting exhibits of varying character on the third. It's a great place to do a bit of winter sailing, and peps you up for the outdoor season soon to come. Are you on?

* * *

Any time a discussion of self-steering boats starts, someone's sure to drag in Slocum's *Spray* as a shining example. Page upon page has been written by various learned gentlemen, commenting on the lines of this famous craft, and attributing her self-steering qualities to the fact that the various centers, such as center of effort, lateral plane, skin friction, buoyancy, etc., all fell in the same vertical line. Many of us swallowed this dope, for want of a better prescription for self-steering qualities. But here's the rub: Charlie Mower is the daddy of *Spray's* lines. At Captain Slocum's request, Charlie journeyed down to the shipyard where *Spray* was supposedly on the railway, only to find that she was afloat! Taking what measurements he could, Charlie awaited another opportunity when *Spray* should be hauled out. Some weeks later, Captain Slocum walked into Charlie's sanctum with a rather bulky bundle under his arm. The bundle proved to be a model of *Spray*, whittled out by some unknown but ambitious gentleman who happened to be around when the Captain finally put *Spray* "on the hard." So Charlie took the lines off this crude model, checked as well as he could with his measurements taken while *Spray* was afloat, faired up the many bumps and hollows, and behold! We have the lines of *Spray!*

What's that? Do I hear cheers from the experts? Or were they groans?

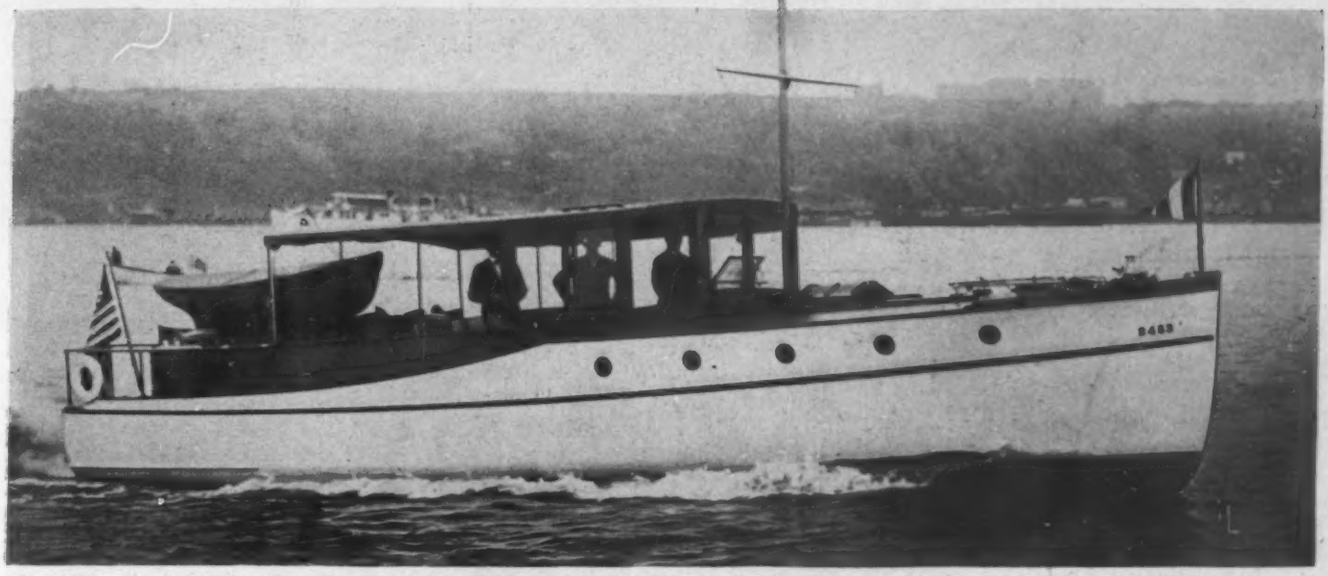
* * *

Over on the other side of the pond, books on yachting subjects, and all kinds of marine dope, have long been in favor. The Briton is a keen student of the game, whereas the average American yachtsman is a dilettante, or a dabbler. That is, he was until recently. For ten or fifteen years ago there were mighty few marine works published in this country — there was no demand. But lately, during the past few years, there has been a decided change. American publishers put out a few books — and sold them. More books appeared — and sold quite readily. And going into the new year, we have quite an array of nautical books of every description — cruise stories, deep water yarns, technical stuff, historical tales, and what not And American yachtsmen are calling for more. Well, I guess they'll get them. A Boston publisher told me recently that a large proportion of visitors to his retail store demanded books of the nautical variety, and he's grabbing up all the marine manuscripts he can find, and is doing a good business, too. Retail bookstores in the larger cities are now carrying quite a respectable array of nautical literature. Evidently, the taste of the American yachtsman has undergone a change. He has found that he can get a huge amount of enjoyment and instruction out of books, and is not slow to satisfy his newly-acquired appetite. All of which is not only good for the publishers, but a mighty good thing for yachting and yachtsmen.

* * *

While it hasn't been definitely settled yet, there is "something doing" on the score of continuing the New London-Cape May Race to a port on Chesapeake Bay. Two clubs are angling about, and one or the other will probably catch the fish. When that's settled, we should be in for some cracking good long distance racing in 1927.

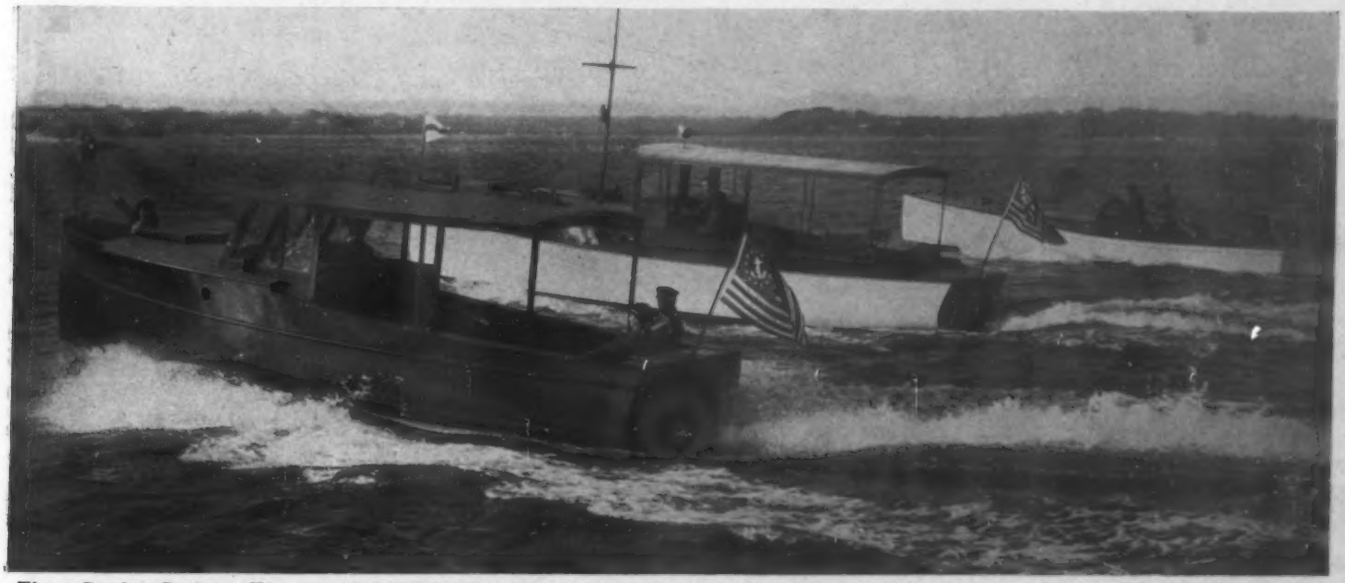
Three Standardized Power Cruisers



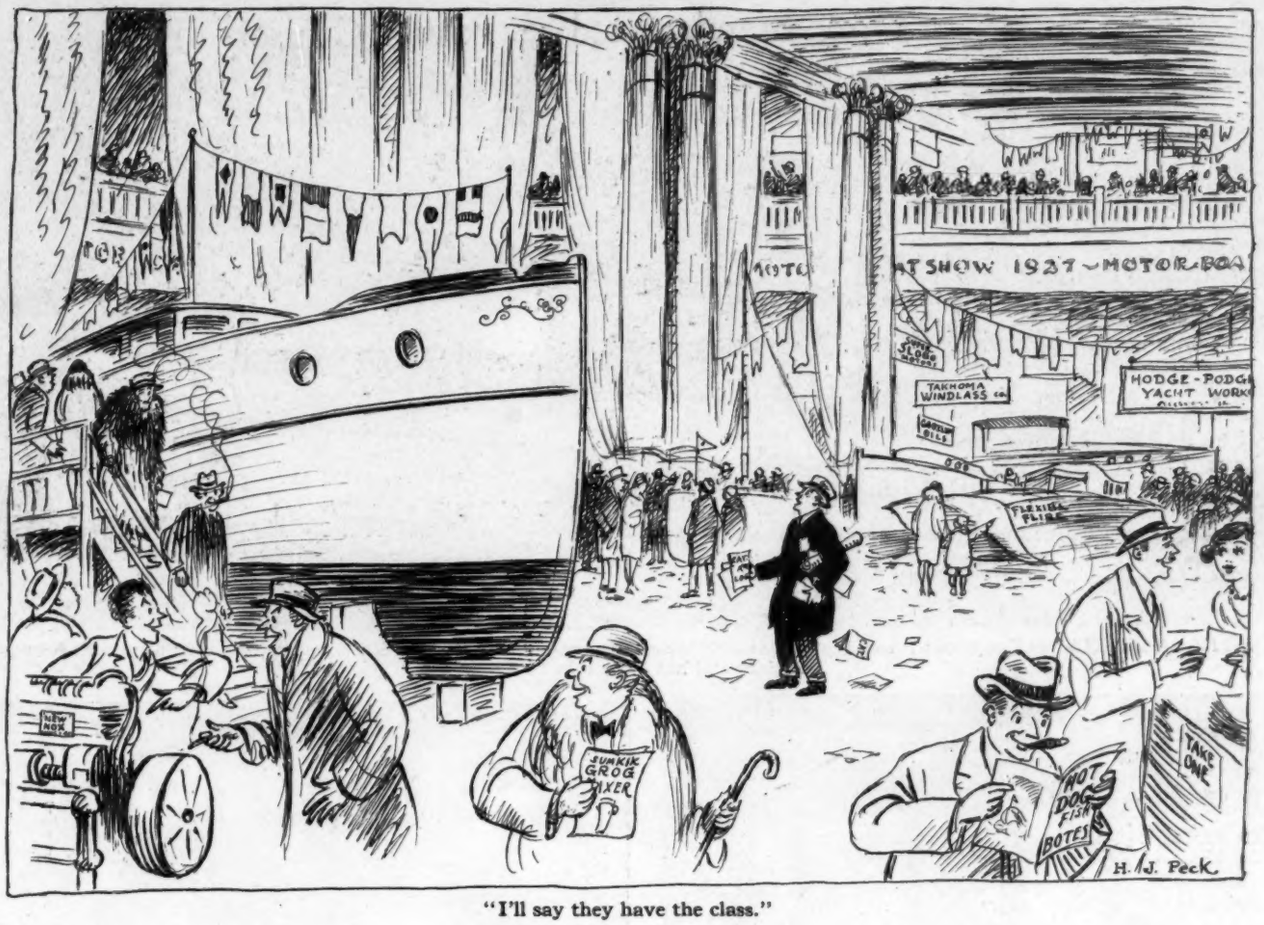
Hazel IV, a Gordon 46-foot Deep Sea Cruiser, is a fine example of modern standardized practise. She is powered with two 6-cylinder Kermath engines and has a speed of 15 miles.

The sheltered bridge deck of *Hazel IV* gives ample protection in all weather.

The after cockpit of the Gordon 35-foot standardized cruiser.



Three Gordon Cruisers: The new 28-foot V-bottom light draft model; the 35-foot standardized cruiser (center) and the speed boat model.



"I'll say they have the class."

The Big Show

REVIEWED BY AN AUTOCRAT

SAY, I'm a Motor maniac —
The auto, don't you know.
It must be twenty-one years back
Since I went to a show

Of motor-boats. I've had no use
For such infantile toys;
I thought them piffling as the deuce —
Though well enough for boys.

But to the Palace now I've been! —
I'm fairly in a daze!
My head is in a spiral spin
From wandering in that maze.

Of power plants, and runabouts,
Of water-cars, and sleds,
Reduction-gears and swell layouts
Of cabin ware and beds;

Of cruisers twenty fathoms long
And hundreds of horse-power,
Of fliers that can hum a song
Of seventy miles an hour!

Not only super types galore
Of snappy motor-craft,
But countless fittings that, from fore,
Range all the way to aft.

The weedless screws, the steering gears
And lights and paint and pumps,
And windlasses, have, through the years,
Advanced with leaps and jumps.

So now I'll crawl back in my "coop,"
And tread upon the gas —
But for the boats I'll give a Whoop!
I'll say, THEY HAVE THE CLASS.

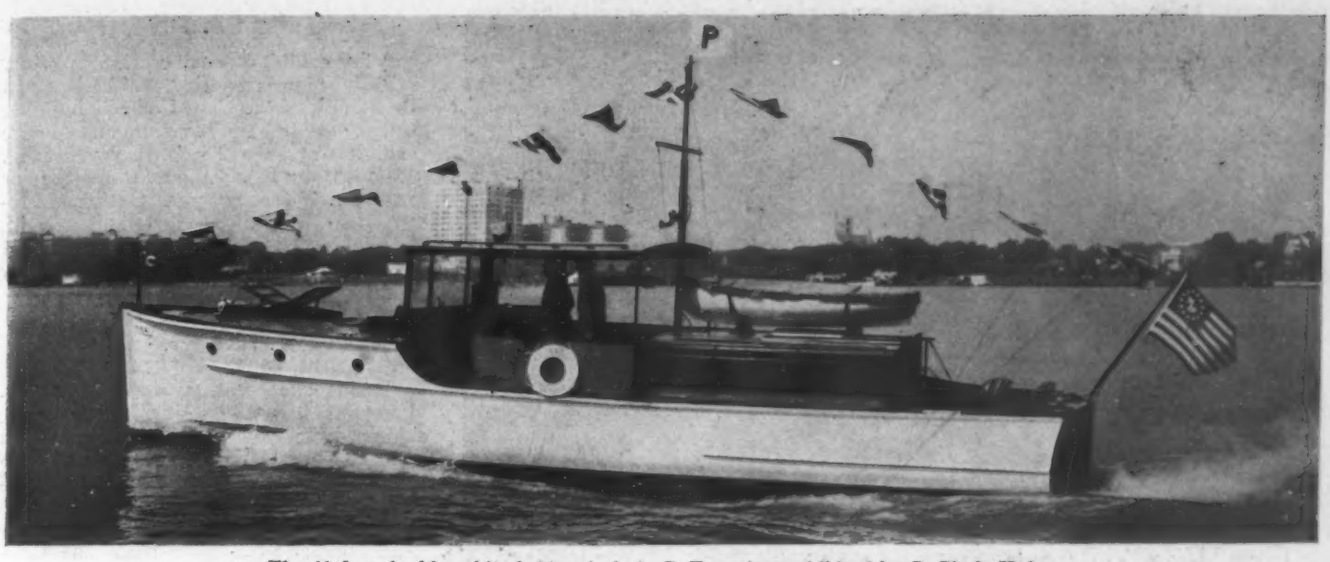
H. J. PECK.

VISITORS to the Twenty-second Annual Motor Boat Show, held in New York January 21st to 28th, were afforded a view of the largest exhibition of boats, engines and marine equipment ever presented in the history of the sport. The phenomenal growth in the size of the Show and the number of exhibits is the best indication possible of the increase in popularity of boating. This year for the first time three entire floors of the Grand Central Palace were occupied instead of two, as heretofore.

The ground floor was devoted entirely to boats, and here were found every type of craft, power and sail, from the small outboard motorboat or yacht tender to the big 62-foot Elco cruiser, the largest craft possible to get in the Palace.

The second floor was given over to the engine exhibits.

On the third floor were grouped the equipment and accessory exhibits. Never has a more comprehensive or interesting line of boat equipment been shown for making the cruiser or speedboat the reliable, comfortable and satisfactory craft it should be.



The 41-foot double-cabin, bridge-deck A. C. F. cruiser exhibited by S. Clyde Kyle.

Boats, Engines and Accessories Seen at the Twenty-Second Annual Motor Boat Show

A. C. F. Cruisers

THE well known A. C. F. cruisers, distributed in New York by S. Clyde Kyle, will be found on the main floor at Booths B-2 and B-3. Two models will be shown, a 41-foot, double cabin bridge deck cruiser, and a 35-foot trunk cabin cruiser. The 41-footer is the same model which became so popular last season, and is an unusually fine craft in every respect, the power plant being a Hall-Scott Model A, 100 h.p., 6-cylinder reduction gear motor, which drives her a good 15 miles an hour with practically no vibration and great economy of gasoline and oil. The 35-foot trunk cabin cruiser is a new model, the details of which will not be known until Show time, when the builders fully expect that it will cause considerable of a flurry among those interested in this size and type of power driven craft. She is, however, a roomy and comfortable craft, of distinctive appearance. Her beam is 9′ 4″ and draft 2′ 9″.

Consolidated Play Boat and Speedway Engines

On the main floor of the Palace, in Space A–2, the Consolidated Shipbuilding Corporation, of Morris Heights, will exhibit one of its famous Play Boat Models. This boat is 34′ in length, with a beam 8′ 6″, and draft of 2′ 9″. The power plant consists of one 180-h.p. Speedway engine, which gives a speed of 24 miles per hour. During the past few years this model has won an enviable reputation among yachtsmen all over the country. Its arrangement is admirable in many respects. The forward cockpit, and large after cockpit, are outstanding features. Cruising accommodations for two, which can be increased to four are found in the snug cabin. A galley is located on the port side, with icebox, large locker and toilet room on the starboard side. Two built-in berths are located forward, with companion steps to the forward cockpit. As a day cruiser, a party of 12 to 15 may be accommodated. This boat is easily operated by one man, all controls being led to steering wheel.

The following well-known Speedway engine models also will be on display, in four- and six-cylinder sizes: R–6; MR–6; MP–6; T–6; P–6; K–4; M–4.

Gray Stock Cruiser

Gray Boats, of Thomaston, Maine, will exhibit one of their stock 36-foot raised deck cruisers on a prominent spot on the main floor. This will be a raised deck cruiser finished in bright mahogany, the same hull as illustrated in December YACHTING, with a different layout, and powered with a Scripps G-6 instead of the Scripps E-6.

Durkee-Guinan Exhibit Yacht Equipment and Cordage

For those interested in outfitting the boat, the Durkee-Guinan Corporation exhibit will be found at Booths 27 and 28 (third floor), where there will be on display an attractive line of both power and sailboat equipment, including steering gears, portlights, binnacles, bells, running lights (both oil and electric), compasses, bronze and lignumvitae yacht blocks, mast track and slides, wicker furniture, ranges and searchlights. For the sailboat man a splendid assortment of Whitlock Waterflex manila cordage will be displayed that will command his attention. Messrs. J. A. Toomey, D. L. Guinan and F. H. Fricke, all well known to New York yachtsmen, will be in charge.

The Consolidated Shipbuilding Corporation's 34-foot Play Boat.

A *Baby Gar Jr.*, a fast-stepping 26-footer exhibited by Gar Wood, Inc. Powered with a 150 h.p. Scripps.

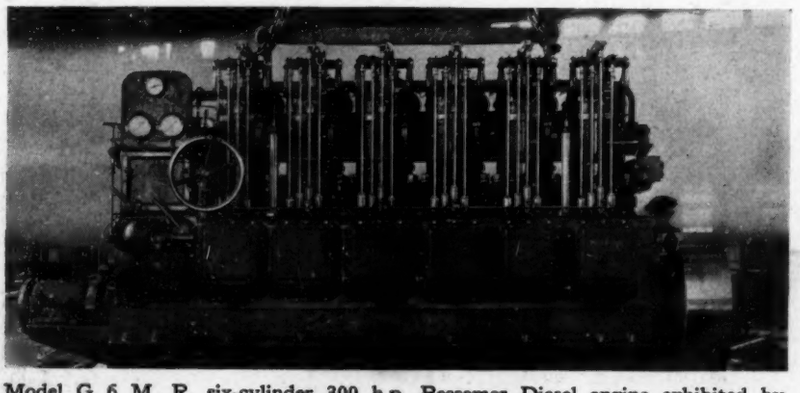
Gar Wood's Runabouts

One of the finest displays of modern runabouts to be found at the Show will be seen at Space C., main floor, where three handsome craft will be exhibited by Gar Wood, Inc. The largest of these craft will be a Standard Baby Gar, a 33-ft. runabout powered with a 400 h.p. 12-cylinder Gar Wood Marine Motor. Next in line will be the new Baby Gar Super Jr., a beautiful little 28-ft. craft with a 225 h.p. 6-cylinder Gar Wood Marine Motor. The third of the Gar Wood line will be the Baby Gar, Jr., the snappy 26-footer powered with a 150 h.p. G–6 Scripps motor. In addition, there will be a cut-away gear box as used in the Baby Gars; a model of the Gar Wood Automatic Self Bailer; several handsome photographs of Gar Wood boats, and a large electric sign showing the *Miss America V* in action.

Howard W. Lyon, New York distributor of Gar Wood, Inc., will be in charge of the exhibit at the Palace.

Bessemer Diesels

The Bessemer Gas Engine Co., of Grove City, Pa., will exhibit in Block B-8, where will be seen one of their 6-cylinder, 9 x 14 marine type Bessemer Diesel engines, which develops between 230 and 300 h.p., being direct reversible and weighing approximately 29,900 lbs. There are a pair of these engines in Mr. Logan G. Thompson's yacht *Sylvia IV*, one in Mr. A. Y. Gowen's auxiliary schooner *Speejacks II*, and several more in fishing craft plying out of Boston.



Model G 6 M. R. six-cylinder 300 h.p. Bessemer Diesel engine exhibited by Bessemer Gas Engine Co.

Banfield Sea Skiffs

The Banfield Sea Skiff Works, of Atlantic Highlands, N. J., builders of genuine Jersey sea skiffs, will have two fine examples of their product on exhibition in a prominent position on the main floor. The first will be the 38-foot De Luxe cruiser, a twin screw boat powered with a pair of 150 h.p., Kermath motors which give a speed of 25 miles an hour. The second will be a 30-foot Sailfish model, in which a 100 h.p., Kermath motor produces a speed of 18 miles an hour.

The Banfield Jersey Sea Skiff Cruiser.

Cape Cod Boats

A fine exhibit of small craft, for rowing, sailing, or power boating, will be found in the exhibit of the Cape Cod Shipbuilding Corp., of Wareham, Mass. Included in the exhibit will be a 20-foot Dory Launch, 18-foot Baby Knockabout, 15-foot Junior Sailboat, 15-foot Seagoing Outboard Motor Boat, 14-foot Decked Sailing Skiff, Special Model Outboard Motor Boat, and two tenders. Captain Charles S. Gurney will be in charge as usual.

Abercrombie & Fitch Co.

Besides a full showing of Chelsea clocks, barometers, automatic electric-running clocks and ships' bells, the Abercrombie & Fitch Co., of Madison Avenue and 45th Street, New York City, will have a splendid exhibit of deep sea fishing tackle such as has seldom been seen. This will include the famous Vom Hofe reels, the Coxe Ocean reel, special tuna rods and reels, harpoon gun outfits for killing big fish, and a full line of rods, reels, spoons, hooks, baits, etc., for every branch of the sport.

John G. Alden

John G. Alden, the well-known naval architect and yacht broker of 148 State Street, Boston, Mass., will have an attractive exhibit at Booth 76, third floor. Besides the numerous models of successful craft, there will be some splendid action photographs of many types of yachts, and portfolios of snapshots of boats in various stages of construction. Plans and blue prints, with full specifications, will be ready for inspection of clients and anyone interested in building or buying any type of boat, sail, auxiliary, or power.

Wamsutta Duck

A booth which bids fair to be unusually attractive to the sailing fraternity is that of Howe & Bainbridge, of Boston, Mass. This will be tastefully decorated with photographs and models of yachts, the latter having sails made of Wamsutta Duck, the fabric from which so many yacht sails are made nowadays. On a center table will be found samples of the various grades of Wamsutta, such as Wamsutta Egyptian Duck, JHB Yacht Duck, etc., besides a large number of samples of the various grades and weights of light sail cloths used for spinnakers, ballooners, etc.

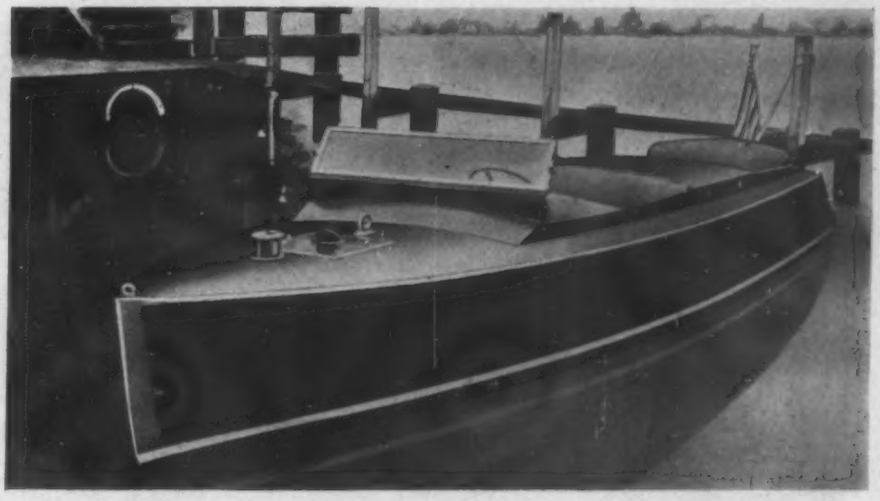
Chris-Craft and the New Cadet Model

Chris Smith and Sons Boat Company will occupy a space 100 feet by 15 feet deep in Block E on the main floor of the Grand Central Palace. This space may be more readily recognized by the fact that for a number of years the Sterling exhibit was located there. Three models of Chris-Craft, one of them shown now for the first time, will be exhibited.

There will be shown the fast 26-foot all mahogany 40-mile runabout, powered with the 150 Kermath valve-in-head high speed motor, while the new Chris-Craft *Cadet* model, a 22-foot version of the famous Chris-Craft, powered with the 70 h.p. Kermath motor, will occupy an important place in the exhibit. The 1927 Motor Boat Show marks the début for this model, which has a forward and an after cockpit carrying 8 passengers with comfort. The *Cadet* has been designed to meet the growing requirements for a smaller boat with a speed of approximately 25 miles an hour that would be appropriate for smaller bodies of water. The beam of the *Cadet* is 6 feet, and it is an all-mahogany job, with salt water fittings throughout. Its price, which is to be announced at the Show, will be under $2,600, which insures its extreme popularity. There will also be exhibited the 26-foot standardized Chris-Craft, powered with the 100 h.p. Kermath marine motor, which gives speeds from 30 to 32 miles per hour.

The Chris-Craft exhibit showing these three models will be one of the largest fleet of runabouts at the New York Show. The booth will be appropriately decorated with black velvet draperies and black standards carrying nickel chain enclosures.

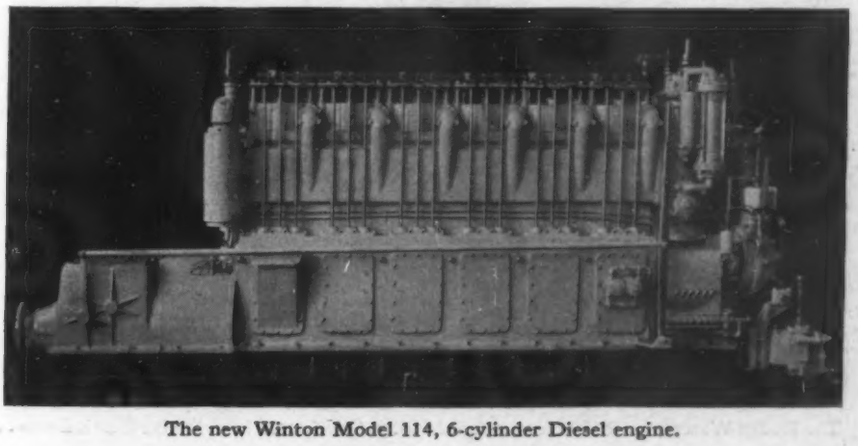
During the same week that the National Show ist aking place Chris Smith and Sons Boat Company will have exhibits at the Detroit and Cleveland Automobile Shows where Chris-Craft models will vie for attention with the latest products of the automotive industry.



The Chris-Craft *Cadet*, a new 22-foot version of the Chris-Craft model, powered with a 70 h.p. Kermath.

Winton Coast Guard Engine on Display at Show

The Winton Engine Company of Cleveland, Ohio, will have an especially interesting exhibit at the Show for those who are interested in getting a close-up view of the latest developments in Diesel engine design and construction. This company will display a pair of their Model 114 Diesel engines and also one of their Model 109 Air Compressor sets. The Winton Model 114 is the engine which the United States Government has recently installed in 44 of their Coast Guard Patrol boats. Each of these boats is powered with a pair of these engines, and one Winton Model 109 Air Compressor set. This Winton Coast Guard engine is rated at 150 h.p. at 450 r.p.m. Since the Government contracted for Wintons boatmen have been anxious to see the new power plant.

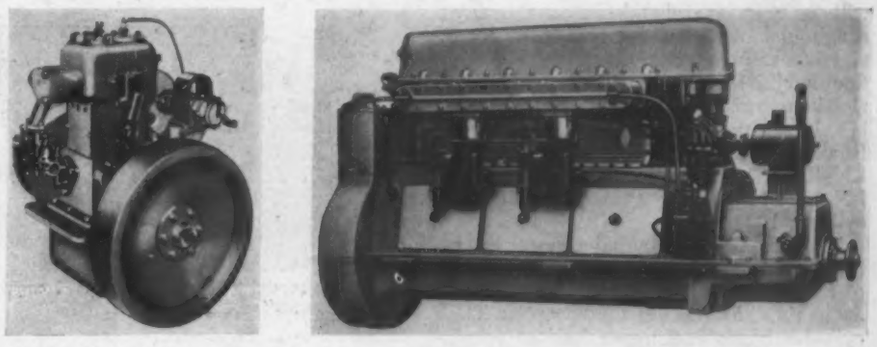


The new Winton Model 114, 6-cylinder Diesel engine.

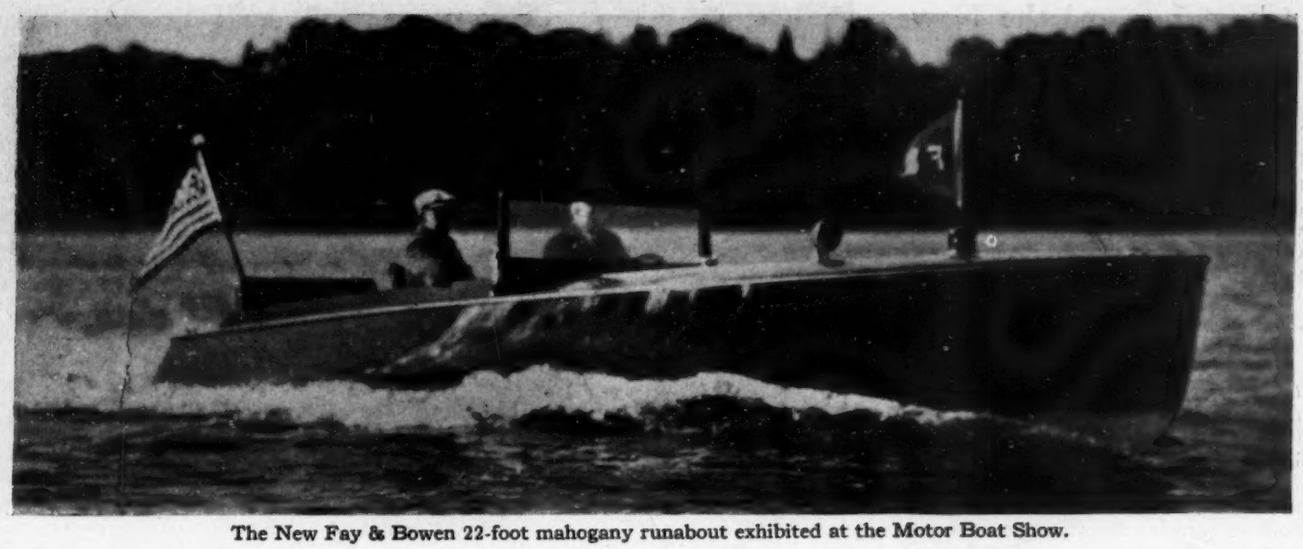
A Full Line of Kermaths, Including a New 150-h.p Valve-in-head Motor

This year the Kermath Manufacturing Company of Detroit will exhibit its complete line of marine motors in the Motor Boat Show. The exhibit will be located on the mezzanine floor, in Block "T", and will represent the most complete showing of models ever before attempted by Kermath. Included in the attractive display will be found the single-cylinder 3 h.p. motor, the 2-cylinder motor representing the 4–5, the 6–8, and the 8–10 h.p. models. The small four-cylinder boat engine, covering the 12 h.p., the 16 h.p. and the 20 h.p. models, will be there, as will a large four-cylinder line which includes the 35, 50 and 70 h.p. motors. Then comes the six-cylinder "L" head model in 65 and 100 h.p. The latest addition to Kermath's varied line of popular sized engines — the 150 h.p. valve-in-head dual carbureted motor — will make its initial bow to the boating world despite the fact that it has been designed for over a year and has been used with remarkable success in runabouts and cruisers for almost that length of time.

The exhibit will be in charge of both factory executives and the Bruns, Kimball organization, New York distributors for Kermath. J. B. Farr, Pres. and L. A. Eldridge, Vice-Pres., will be on hand.



The largest and the smallest of the Kermath line; a 3 h.p. single-cylinder and the new 150 h.p. 6-cylinder engine.



The New Fay & Bowen 22-foot mahogany runabout exhibited at the Motor Boat Show.

Fay & Bowen Boats and Motors

The Fay & Bowen Engine Co., of Geneva, N. Y., will have two exhibits this year, one on the main floor, and another on the mezzanine floor. The main floor exhibit will be in Block G-2, where will be seen two handsome mahogany runabouts, one of which is 27 feet long and 5 feet 3 inches beam, and the second a fine new 22-footer with a beam of 5 feet. On the mezzanine floor, at Block Z-1, will be shown the complete line of Fay & Bowen motors, which will include Model LN-403, the new 20 h.p. Gobest, LC-41, LN-42, LN-43, LNS-43 and the new 6-cylinder LC-61.

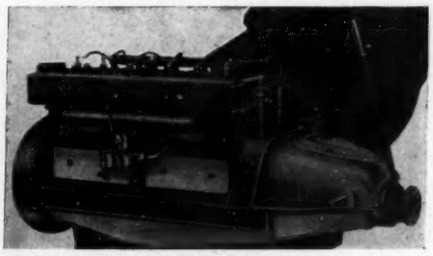
The new LC-61, 6-cylinder motor has a bore of 3⅛" and stroke of 4½", and on test has delivered continuously for hours at a time 55 h.p. at 2,000 r.p.m. The cylinder block and upper half of crank case are cast together; the base, clutch case and flywheel housing are aluminum, the weight complete being but 845 pounds. The intake and exhaust manifolds are manufactured under special patents, and so perfect is the carburetion that the throttle may be snapped from open to shut, and vice versa, and the motor will not miss an explosion. It should make an ideal motor for medium-speed runabouts and certain types of cruisers where a man wants the ultimate in refinement, reliability and operating economy.

New Jersey Paints

The New Jersey Paint Works, of Jersey City, N. J., will have an attractive booth at Space 34, third floor, where they will exhibit samples of their well known line of marine paints and varnishes. Captain Charles H. Cugle, the well known authority on navigation, will be in attendance every evening from 8 P.M. until 10:30 P.M., to answer questions and distribute information about navigational subjects to anyone interested.

Gray Motors

Not only will Gray Marine Motors, manufactured by the Gray Marine Motor Co., of Detroit, Mich., be exhibited by Bowler, Holmes, and Hecker, but they will also be installed in a number of boats at the Show, as follows: Gray "Six-90," in Dart Junior runabout exhibited by the



The Gray model "Six-40" motor. Length 50"; weight 540 lbs.

Indian Lake Boat Co., Gray "Six-40," in a 22-foot Jardine Special, exhibited by the Edw. Fell Jardine Boat Co., of Atlantic City, N. J.; another "Six-40" will be found in the Gesswein 24-footer, and still another in the Richardson 26-foot Cruisabout.

Dodge Watercars

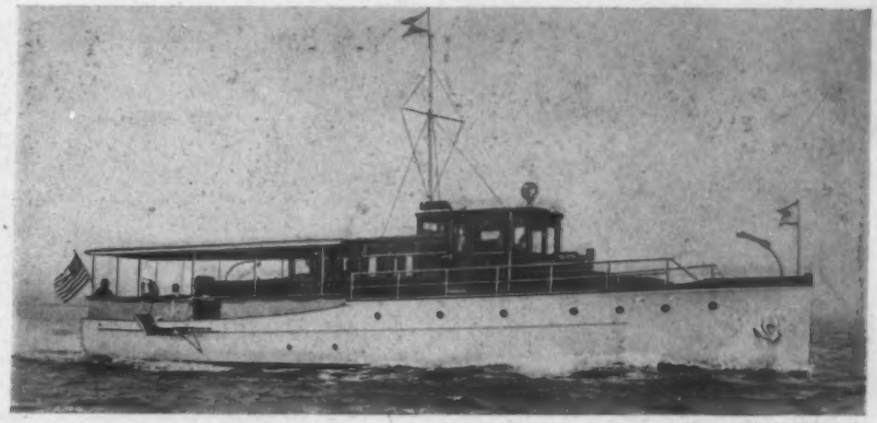
Three fine mahogany runabouts will be shown in a prominent position on the main floor by the Horace E. Dodge Boat Works, of Detroit, Mich. The *Horace*, a splendid 37-footer which made a fine showing in several contests last year, is the largest, and is powered with a Wright Typhoon motor which is said to give her a speed in excess of 50 miles an hour. The next is the stock 26-foot Watercar, which is rapidly increasing in popularity. The motor installation will be a 4-cylinder Dodge marine motor, though the usual equipment is a Dodge-Curtis motor. The third craft is a standard 22½-foot Watercar with 35 h.p. 4-cylinder Dodge marine motor. This boat differs from the 26-footer in having a single cockpit, and appeals particularly to these who want service from a boat with no trouble or attention.

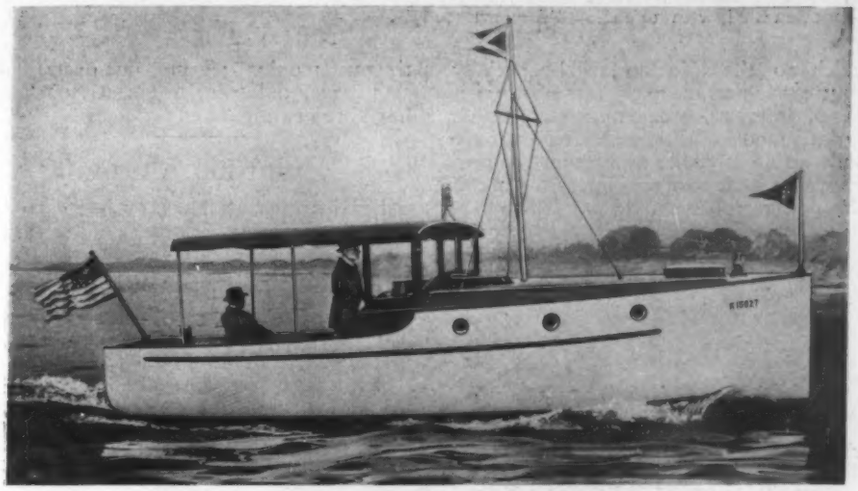
The Dodge Watercar—26 feet long, speed 37 m. p. h. with a 90 h. p. Dodge Curtis motor.

The 1927 Elco Exhibit

The exhibit of the Elco Works, Bayonne, N. J., will again be the largest at the Show. In addition to the show room, Port Elco, which becomes part of the Palace during the week, they will have space on the main floor, and among the engine exhibits on the mezzanine floor. All five of the Elco stock model cruisers — ranging from 26 to 62 feet — will be shown, which, with the engines that power them, will form the most complete exhibit of cruising motor boats ever shown by one manufacturer.

This company is one of the pioneers in the building of standardized boats and it again presents to the public a variety of models unequaled in the range they cover. The Elco 62-foot motor yacht will be the largest boat at the Show. An able offshore cruiser, she has accommodations which in comfort rival the houseboat type of yacht. She can berth eight or more in the owner's party, together with a crew of from three to four men. Power is supplied by a pair of Elco F-6 engines which give a speed in excess of 13 miles an hour.





The largest and the smallest of the Elco fleet. Above, the 62-foot cruiser, the largest boat at the Show. Below, the 26-foot cruiser.

Next in size is the Elco 50-foot cruiser which has a single F-6 engine and a speed of 13 miles an hour. A double stateroom and main cabin furnish berths for six, while a crew of two can be quartered in the large engine room. Her most striking features are the roominess of her cabins and the large amount of deck space.

The Elco 42-footer, which will be shown on the main floor, is similar in type to the 50-footer, but is designed for the man who is actively interested in the running of his own boat. She provides for only one paid hand. Her power plant is the Elco A-4 engine which drives her at a 12-mile speed.

Almost too well known to require description is the 34-foot Elco Cruisette, hundreds of which are in service. With cruising accommodations for as many as six, and a high economy of operation, they have become justly popular. During the past season two Cruisettes added to the laurels of the type by winning the time prize in every cruiser race in which they were entered, driven in excess of 13 miles by their Elco A-4 engines. These boats are also offered powered with an F-6 engine which gives a 20 mile speed.

The smallest of the Elco fleet is the 26-foot cruiser. Introduced at the Show two years ago, it was the first practical boat, in which four can cruise with comfort, offered to the public at a price within reach of a modest income. They have become as popular as the Cruisette, and with the latest improvements in appearance and equipment, will have a strong appeal to the yachtsman who cannot afford the more expensive boats.

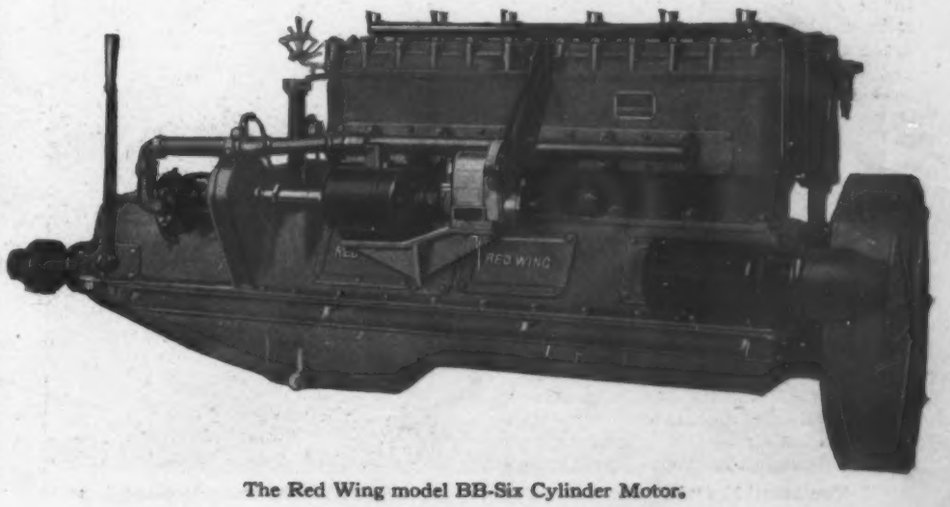
The engine exhibit on the mezzanine will include the Elco A-4 and F-6 Marine engines.

Tiebout for Specialties

W. & J. Tiebout, the well known marine outfitters of 118 Chambers Street, New York City, will have an interesting exhibit at Booths 95, 96 and 97, second floor. In addition to the latest of marine hardware, they will show some attractive specialties, including American Strombos Horns, Elgin Tachometers, American Copper Metallic Paint, James H. Tarr's Copper Bottom Paint, and Plastic Wood, besides other specialties too numerous to mention. Drop in at Tiebout's booth for a glimpse of the latest and best marine gadgets.

Red Wing Thorobreds

The complete line of Red Wing Thorobred motors, ranging in power from 7 to 150 h.p., in 2- 4- and 6-cylinder models, will be shown at Space V, mezzanine floor, by the Red Wing Motor Co., of Red Wing, Minn. The Big Chief 6-cylinder models will be shown in three sizes. A twin-screw power plant of a pair of BB-SIX 80–110 h.p. Red Wings will be of especial interest. The only newcomer in the Red Wing line is the BB-FOUR, an adaptation of the successful BB-SIX.



The Red Wing model BB-Six Cylinder Motor.

The 23-foot Sea Sled, with an enclosed forward cockpit.

Sea Sleds

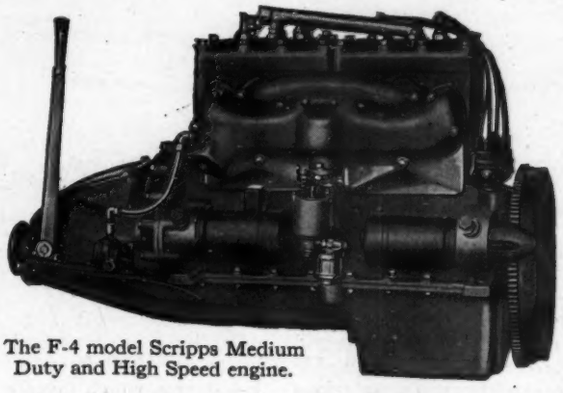
The Sea Sled Corporation, of Mystic, Conn., and New York, will exhibit three of their attractive 1927 models at Space A-1, facing the front entrance of the Palace, and a portion of Space E directly opposite. Two of the sleds will be of the 23-foot model, one of the sedan type, the other of the open touring type. The third craft will be the 28-foot sedan type. In addition, a motion picture film will be shown picturing the operation of Sea Sleds on Biscayne Bay, through the Florida East Coast Canal, and on Lake Worth.

Scripps Motors

A full line of Scripps Motors will be shown this year by the Scripps Motor Co., of Detroit, at Space N. These will include both 4- and 6-cylinder motors, Models D-2, E-4, E-6, F-4, F-6, Junior Gold Cup, and Model G-6. In addition, they will also show Scripps engines with integral reduction gear.

Matthews Cruisers

The exhibit of the Matthews Company, of Port Clinton, Ohio, will consist entirely of one of their Matthews Standard "38" Single Cabin Cruisers, with standard finish, equipment, etc. Around the booth, which is on the main floor, will be specially built easels and complete sets of running views, interiors, etc., enlarged, of their various models. Matthews Cruisers have built up an enviable reputation the past few years, and showgoers interested in this size power cruiser should not fail to visit the Matthews booth.



The F-4 model Scripps Medium Duty and High Speed engine.

Lux Fire Extinguishers

Walter Kidde & Co., of New York, will occupy Booths 74 and 75, third floor, where they will exhibit the Lux System of Fire Extinguishing, which utilizes liquid carbon dioxide, and is especially designed for the protection of various types of yachts. In addition, they will run a continuous moving picture demonstration showing actual cases where serious fires have been extinguished on boats.

Evinrude Motors

Besides their standard outboard models, the Evinrude Motor Co., of Milwaukee, Wis., promises to have a couple of new ones on display at the show which will border on the sensational, wherefore outboard enthusiasts should make it a point not to miss the Evinrude exhibit in Block R. In addition, they will show several boats adapted to outboard motors, high pressure and centrifugal pumps, etc.

The Matthews "38" Sport Fisherman — one of the Matthews standardized line.

Richardson Boat Co.

In Block B-7 will be found the exhibit of the Richardson Boat Co., Inc., of North Tonowanda, N. Y. This will consist of one of their new stock 26-foot cruisers, the plans of which appear on page 60 of this issue. A duplicate of the famous 151-class hydroplane *Spitfire V*, built by the Richardson Co., will be found at the booth of the Peerless Marine Motor Co., on the mezzanine floor.

Hydraulic Steering and Engine Controls

The Marine Controls, Incorporated, of Rochester, have an exceedingly interesting exhibit of their Merican Hydraulic Steering and Engine Controls, suitable for any size yacht, from the largest to the smallest. The exhibit will be in booth 42 and W. Steve Hall will be in charge.

The Tunaville Trolley II, a standardized Barbay Sea Skiff exhibited by Johnson Bros., Pt. Pleasant, N. J.

Hacker & Fermann, Inc.

Four different boats, of the runabout, hydroplane and fast V-bottom cruiser type, will be exhibited in Space L, main floor, by Hacker-Fermann, Inc., the well known designers and builders of Detroit. First is the 1927 model Dolphin runabout, practically a replica of the 1926 boat, though 2 feet shorter and with many improvements. Then will come the Dolphin De Luxe, an entirely new model 28 feet long, which the builders believe is the finest stock runabout equipped with a marine motor selling at anywhere near its price. The standard 24-foot Dolphin will be equipped with a 100 h.p. Scripps Junior Gold Cup motor, while the Dolphin De Luxe will have a Scripps 150 h.p. Model G motor.

Another addition to the Hacker-Fermann line will be a 35-foot V-bottom all-mahogany fast cruiser, combining the grace, appearance and speed of a runabout with the accommodations of a cruiser. There are full cruising accommodations for four people, two cockpits, galley, wash room, etc. A 150 h.p. Scripps motor gives a guaranteed speed of 20 miles an hour, though 24 miles have been made on test runs.

The fourth craft will be *Miss Westchester*, the Atlantic Coast champion of the 151 hydroplane class. She is an exact duplicate of *Spitfire VI*, the National Champion which defeated all comers at the San Diego Regatta in December.

New Johnson Outboards and Aquaflyer

The Johnson Motor Co., of South Bend, Ind., will have on exhibit three new outboard models, one previous outboard model, and their new runabout, the Aquaflyer, which seems destined to make a sensation. A description of the new motors and the Aquaflyer will be found on page 82.

A Fast Skiff for Off Shore Fishing

Johnson Brothers, of Point Pleasant, N. J., exhibit a very fine fast Barbay Sea Skiff 25′ 9″ long x 6′ 10″ beam that will make a big appeal to the man who wants a sturdy off-shore boat for fishing or use as a general runabout. The sea skiff model lends itself particularly well for rough water. The boat is powered with a Model G-6 158 h.p. Scripps model, and a speed of 30 miles an hour has been attained easily over a measured mile course. This boat is being built as a standardized model with 100 h.p. Scripps motor. The type will give remarkable service in all weathers both inshore and offshore.

Valspar Products

The waterproofness of Valspar Varnishes and Valspar Varnish Stains will be fully demonstrated in a prominent booth on the third floor by Valentine & Co., of New York City. A stream of water will run constantly over panels painted with both varnish and varnish stain. Color panels of the various Valspar Enamel Standard Colors will help one to choose just the right shade for the particular purpose in mind. Valspar Bronze Bottom Paint will be shown on the bottom of a handsome model yacht.

Palmer Motors

One of the largest and most complete line of motors in the Show will be seen at the exhibit of Palmer Bros., the well known motor manufacturers of Cos Cob, Conn. In horsepower they will range from 2 to 50, in cylinders from 1 to 6, in both two and four cycle models, and for light, medium, and heavy duty work. Many of the standard Palmer motors which have been favorites for years will again be seen, with modifications and improvements. The newest of the Palmer line, the Little Huskie, a 15 h.p. 4-cylinder motor of small size, compactness, and excellent power, will be sure to attract the attention of all those interested in a motor of this size and type which is the very latest thing in design and equipment.

Perrine Sneakboxes

For fast sailing, safety, and all-around usefulness, the sneakbox model, so popular in New Jersey waters, is hard to beat, especially as it can be built at a very moderate cost. The veteran J. H. Perrine, of Barnegat, N. J., will have several of his latest models on exhibition at the show, and visitors to his exhibit are sure to be agreeably surprised to see what a fine little craft they can obtain at small cost.

Kelvin & White Navigation Equipment

The man who is interested in steering a straight course and in making his landfalls where they should be, will set a compass course for Booth 69, on the third floor, where Kelvin & Wilfrid O. White Co., of Boston and New York, exhibit a complete line of everything necessary for proper and easy navigation. Here will be found sextants, compasses, binnacles, course protractors, chart-tables and everything that one can think of that is necessary for accurate navigation. A new binnacle with a compass corrector built in will enable the yacht owner to adjust and correct his own compass, the magnets being carried in trays beneath the compass, with full directions for proper placing to eliminate compass deviation.

Columbian Propellers

The popular Columbian Propellers will be exhibited on the third floor by the Columbian Bronze Corporation. Ten different types, for use on craft of every description, will be exhibited, and a trained staff of attendants will be constantly on hand to help all hands solve their propeller problems. The Columbian Three-Blade Weedless propeller will doubtless attract a lot of attention, as it is claimed that it is absolutely weed-proof while sacrificing no efficiency in open water.

Whistler — a Free Bottom Craft

Among the most interesting of the boat exhibits at the Palace is that made by Free Bottom Craft of one of the famous *Whistlers*, driven by an aeroplane motor and air propeller. These boats have been in actual operation for over a year, and where the depth of water is limited they have proved a great boon to the boatman, as they will actually "float on a heavy dew." Having no appendage of any kind on the bottom, and lifting as they attain speed, they can be run over sand bars or through weeds and marsh grass where there are but a few inches of water.

The invention of George B. Post, the hull of the boat, which is 22 feet in length, was designed by F. K. Lord. The hulls are mahogany planked and finished and are fine examples of boat building. Speeds in excess of 30 miles per hour are obtained. The sensation in riding in one of these craft is very much the same as when one "taxies" in a hydro-aëroplane, as they merely skim the surface of the water. They have proved good sea boats in rough water, as several ocean runs made by the *Whistler* have shown. Their speed is not reduced, but is actually accelerated when running in water of less than 12 inches in depth.

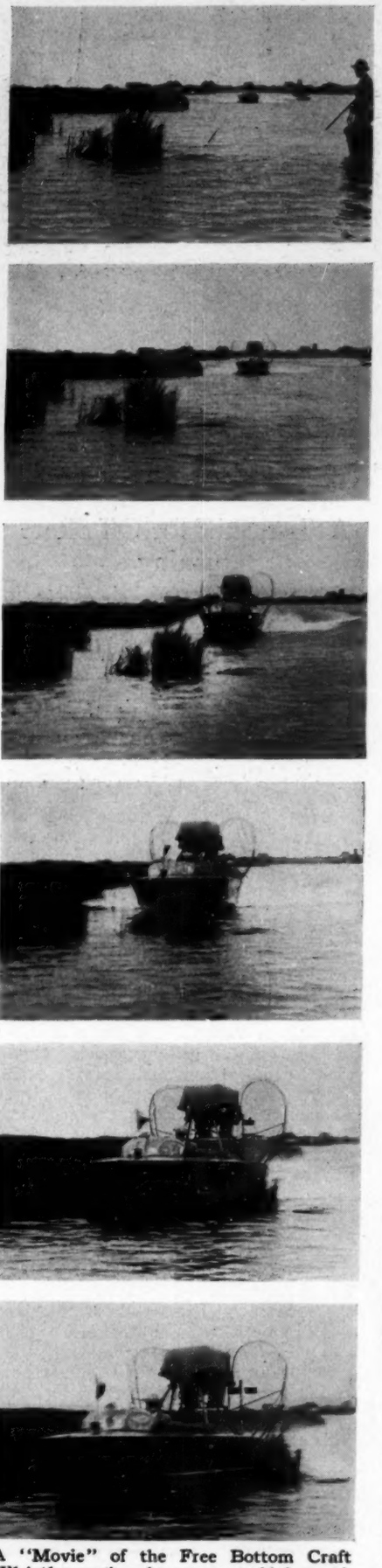
E. J. Willis at the Show

Block "O" of the E. J. Willis exhibit on the mezzanine floor will be devoted exclusively to Penn Yan "Dinks," both with sail, and with and without outboard motors; a Penn Yan Super Baby Buzz; Penn Yan Hydroplanes, which will do 26 miles per hour or more with a big Johnson motor, and rowboats.

On the third floor, in booths 77, 78, 79 and 80, the same company will show a complete line of new Wilco DeLuxe fittings, many of which are original in design, or show substantial improvements on some existing accessory. This includes new model alcohol and Protane stoves, made of all white enamel, trimmed with brass, so that they cannot rust. There is also a complete line of cast bronze interior lighting fixtures designed especially for small boats, that are ornamental, rugged and substantial enough to stand the gaff.

An interesting lot of weather recording sets consists of barometer, hygrometer and thermometer, on a beautiful mahogany back. There is also a complete line of Crodon Plated material, and during the show there will be given an actual demonstration showing the far reaching effect of this new process which is rapidly being used on many of the better boats. Several of the boats at the Show will be completely equipped with Crodon.

Another demonstration to interest the yachtsman will be one on Plastic Wood. This new substance is easy to handle, does not stick to the hands, and hardens with practically all of the properties of wood, as holes can be bored in it and nails driven through it, while it will not split, swell or crack. This is one of the most important discoveries brought out this season for the boat builder.



A "Movie" of the Free Bottom Craft *Whistler* cutting the corners at high speed.

Continental-VanBlerck Motors

Joseph VanBlerck, Inc. of Plainfield, N. J., show a comprehensive line of the famous Continental-VanBlerck motors in six models, the cylinder displacement running from 169.25 cu. in. in Model 250 to 548.69 cu. in. in Model 254. All of these engines are six-cylinder models, the bore and stroke ranging from 2¾" x 4¾" in the smaller sizes to 4½" x 5¾" in the larger size.

The dependability and reliability of Continental-VanBlerck motors are the result of ability and expert knowledge on the part of the manufacturer. This is based on a quarter century's experience in the application of gasoline power to marine requirements.

Debevoise Marine Paints

The man who is interested in a racing bottom for his boat, or in keeping his yacht "smart," will find a lot to interest him in the booth of Debevoise Marine Paints, Brooklyn, N. Y., who exhibit in space 30, third floor.

Debevoise Racing Green has been used with great satisfaction by many racing yachtsmen. It is a beautiful light green shade and makes a smooth, hard racing finish on either wood or metal bottoms.

The company also makes a marine flat white which it claims is the most satisfactory in the long run because it does not blister or peel.

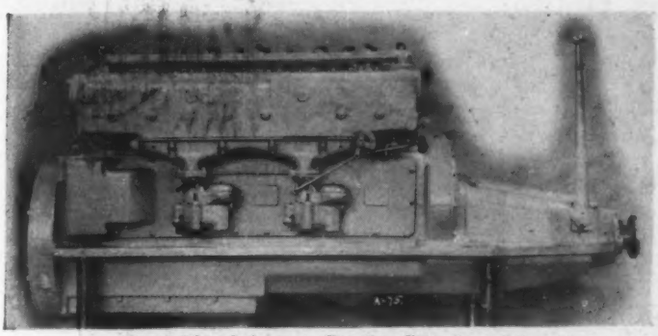
Then there is a marine glossy white for those who desire a glossy finish; the Depaco deck paint, Debevoise white anti-fouling composition and a line of Fulton copper paints in browns, reds and greens.

Mianus Diesel and Gasoline Engines

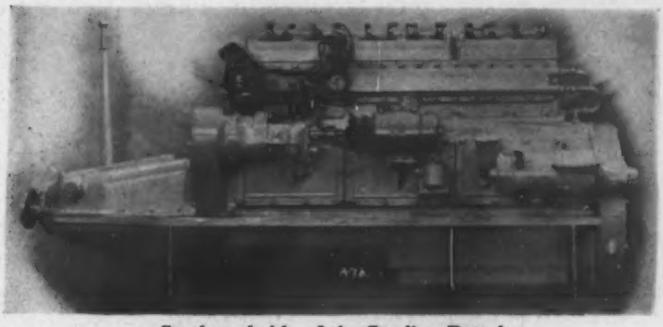
The Mianus exhibit, on the Messanine Floor, Block T, contains both Diesel and Mianus gasoline engines. The models shown will consist of the following: —

A 70 b.h.p., 4-cylinder, 2-cycle Mianus full Diesel engine, direct reversible; a single cylinder, 3 h.p., 2-cycle gasoline engine, make-and-break ignition; a single cylinder, 5 h.p., 2-cycle gasoline engine, jump-spark; a 2-cylinder, 4-cycle, 5-8 h.p., 850-1400 r.p.m. new Model Mianus gasoline engine, known as Model 28, L head; a 4-cylinder, 4-cycle, 12-16 h.p., 850-1400 r.p.m., cast en-bloc new Model Mianus gasoline engine, known as Model 416, L head; and a 4-cylinder, 4-cycle, 25-40 h.p., high speed Model 44, gasoline engine.

Models 28 and 416 are fitted with jump-spark ignition, Eisemann magneto, geared water pump and enclosed Joe's reverse gear. Model 44 is fitted with jump-spark ignition, Eisemann magneto, and enclosed Paragon reverse gear.



Port side of the new Sterling Petrel model.



Starboard side of the Sterling Petrel.

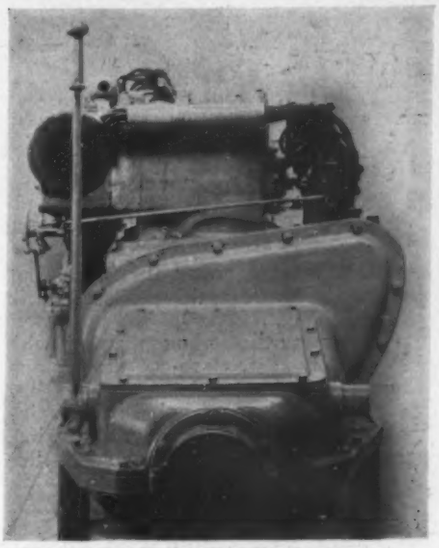
A Sterling Petrel Makes its Appearance

To the famous line of Sterling marine engines, embracing such well known names as Sea Gull, Dolphin, Coast Guard, Viking, etc., is now added a new motor, the Sterling Petrel, which made its initial appearance at the Show.

This engine was designed primarily for the 26-foot stock runabouts and the 38-foot express cruisers. It is, however, suitable for runabouts up to 36 feet long and also for twin-engine cruisers up to 55 feet. The bore is 4¾", stroke 6", and the rating is 65 h.p. at 800 revolutions, 100 h.p. at 1,200, 130 h.p. at 1,600, and 150 h.p. at 2,000 revolutions. The runabout engine weighs 1,350 pounds, and the cruiser engine 1,500 pounds. There is a reduction gear model, in two to one or three to one reduction, incorporating a quiet herringbone reduction gear. The gears are mounted on ball bearing shafts and being over-size and proportionately carrying lighter loads, the nearest to absolutely silent operation has been obtained. The regular engine measures 75 15/16" long, and 23 13/16" high from the crank shaft center, so that it will fit very nicely in any of the stock cruisers for which it was designed. It is a trifle longer than it is possible to build such an engine, but the added length and the additional weight is put into the engine purposely to increase its life.

The cylinders are cast six *en bloc* with a turbulent form of head. The heads are removable in pairs and there is ample water cooling space between the cylinders, around the valve seats and around the spark plugs, protecting against warping. The upper crankcase has seven large bearing supports with hand holes on both sides, permitting almost a clear opening of the inside of the engine and readily enabling rod bearing adjustment. The lower crankcase is cast the full length of the engine without joints, and is designed to distribute the weight on a 20" wide foundation. The attachment to foundation is by a wide flange the entire length of the engine which prevents anything from getting under the engine or between the foundations. The crankshaft is 3" in diameter.

Two carburetors are used; the idling speed is below 200 revolutions, the maximum safe speed in excess of 2,000 revolutions. The exhaust can be taken from either end of the manifold.



Rear view of the Sterling Petrel.

The engines are built true right and left hand. The flywheel is enclosed, although it added several inches to the length. The ignition is a 12-volt battery system, employing two spark plugs to a cylinder. The generator is also 12 volt, and one of extra capacity having an output of 225 watts, can be supplied for cruiser lighting.

The reverse gear is a multiple disc type; the steel discs being hardened and ground. It reverses at engine speed through spiral bevel gears. The gear has a neutral that permits running the engine up to 1,200 revolutions with no tendency for the propeller shaft to revolve.

The arrival of this model rounds out the already long line of Sterling engines for every marine use.

Wilcox, Crittenden Marine Equipment

In booths 19 and 20, on the third floor, will be found a most comprehensive exhibit of every article pertaining to the equipment of a power boat or yacht, under the name of Wilcox, Crittenden & Company.

For 80 years this firm has been making marine hardware and boat equipment and this fact is extensively featured in this year's display. Many of the Wilcox, Crittenden specialties will be found at the company's booths, while others will be seen at the exhibits of the various dealers who handle the Wilcox, Crittenden line.

The exhibit will be in charge of Clarence F. Herrmann, William W. Wilcox, Jr. and R. C. Ennever.

Among the specialties that are made by Wilcox, Crittenden & Company, and that will be seen at the Show, are the Navy Windlass, the Wilcox Portlights with mosquito screen to fit, bracket steerers for power boats, flange couplings, a complete line of stuffing boxes and stern bearings to suit any engine installation, running lights, compasses, pumps — in fact any and every article required for pleasure boat use.

Eighty years of service to the boat owner makes the Wilcox, Crittenden & Company one of the oldest and foremost in its field.

Toppan Dories, Tenders and Outboard Motor Boats

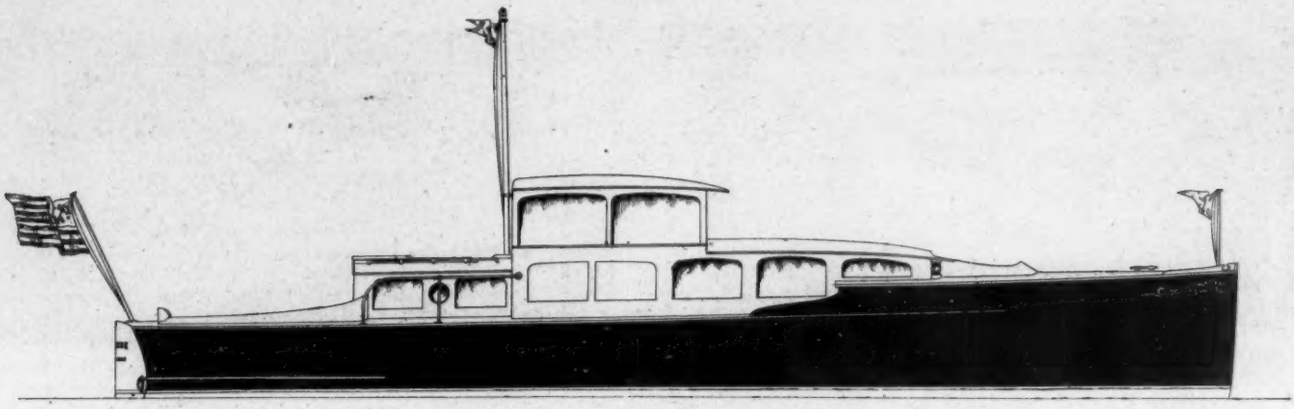
The exhibit of the Toppan Boat and Engine Company on the mezzanine floor will consist of a variety of small boats for nearly every use.

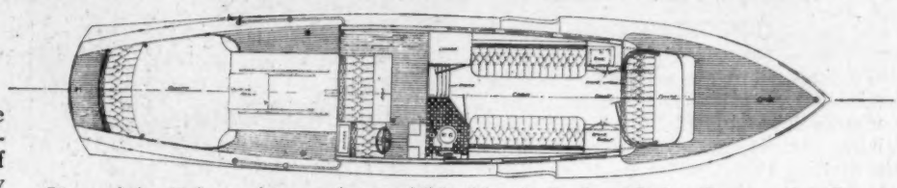
Two of the Toppan towing Dory type of yacht tenders will be shown, 10 feet and 12 feet in length, and also 12-foot and 15-foot Toppan rough water, high sided outboard motor boats, equipped with Elto motors. In addition to these actual boats, enlarged colored photographs of the Toppan 30-foot Sea Crest express cruiser, powered with 100 and 150 h.p. Kermath engines, and also of the Toppan Sea Dog double cockpit runabout and the popular 22-foot power dory launch.

Carpenter & Company's Marine Hardware

A western manufacturer of marine equipment who will exhibit at the Motor Boat Show is George B. Carpenter & Company, of Chicago, Ill.

In addition to the usual line of marine hardware will be found several specialties, manufactured by George B. Carpenter & Company exclusively. The exhibit will emphasize Carpenter electric running lights, Carpenter electric post lights, the GBC improved adjustable strut, the improved Carpenter steerer and GBC port lights.





Plans of the 42-foot cabin runabout exhibited by the Luders Marine Construction Co.

New Luders Standardized Cabin Runabout

One of the outstanding boats at the Show is the new Luders standardized 42-foot cabin runabout. A smoothness of stream-line house and trunk perfectly balanced on a beautiful mahogany hull give an impression of speed and grace. The Luders Company are standardizing this boat to cover the field of those who want something a little better than the usual run of standardized products and along the lines of a custom made boat.

This "runabout" is 42 ft. long, 9 ft. beam, and is powered with a 6-cylinder Sterling Dolphin engine, giving a speed of 29 to 30 miles per hour.

The hull is of the "V" bottom type which immerges into a round bottom type forward. It is a double-planked mahogany job. Particular attention has been paid to the construction of the motor foundations to eliminate vibration.

The arrangement of the boat is shown in the plans.

All fittings and interior hardware throughout are Crodon-plated including the divided windshield at the forward end of the cab. Automatic automobile type windows are fitted in the cab and cabin. The upholstery of the cockpits and cab are worked out in a blue leather, while the inside of the cab roof is upholstered in a light gray Pantasote.

A New Universal Flexifour Motor

Among the new marine engines brought out at the Show this year, the new Flexifour of the Universal Motor Co., Oshkosh, Wis., will take a prominent place. For compact, reliable power that takes but little room in a boat, this new engine will be hard to beat.

Greater sturdiness, more power with less weight, neat, clean-cut design, and smoothness of operation are, according to the manufacturer, the outstanding features of the new Flexifour 10–15 h.p. motor, which is even more compact than former models.

The new model is a left-hand motor and consequently swings a right-hand wheel. The new design permits mounting the flywheel closer to the front main bearing, and also makes it possible to use a neat and strong reverse gear housing, which is bolted to the gear case and is oil-and water-tight. The reverse gear and clutch have been made stronger, yet the reverse gear housing is more compact and shorter.

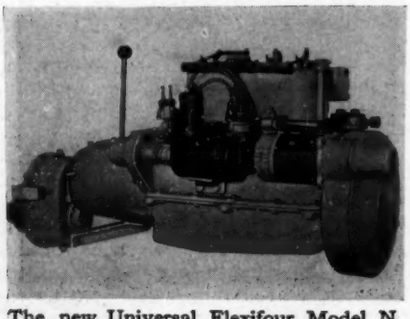
While the overall length of the motor has been reduced 7″, the installation dimensions for the bed plate remain the same. The new model is thus interchangeable with former models by using a longer propeller shaft, or by moving the motor back a few inches.

All models are furnished with a unique arrangement for rear-hand starting, and the same crank may be used for either rear-hand starting or front-hand starting. Atwater-Kent ignition is standard equipment, while Bosch magneto is optional at a small additional cost. A 6-volt two-unit automobile type electric starting, lighting, and ignition system is standard on all electric starting models.

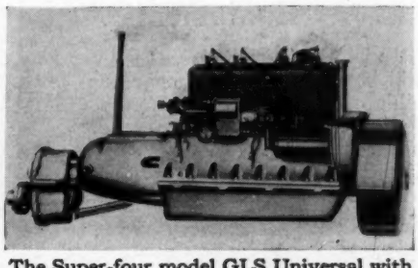
The DeLuxe Model differs from the standard in that duralumin connecting rods and lynite pistons are used, as well as aluminum for the base, reverse gear housing and flywheel cover, making an exceptionally light-weight motor with extraordinary acceleration and extreme smoothness of operation at all speeds.

The Universal Super-four, Model GLS 15–30 h.p. motor, has not been changed, and the only change on the Super-four Model GLH has been in the manifold design with the addition of two carburetors as standard equipment. This change added 6.8 h.p., and the Model GLH now develops 46.8 h.p., the rating being increased from 20–40 h.p. to 25–45 h.p. This increase in power is not due to increased speed, but to changes in manifold design and carburetion.

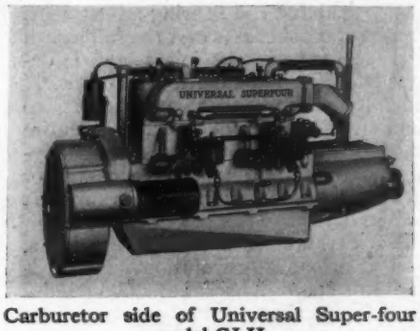
Believing that there was an urgent need for more economical and more flexible power for cruisers and heavy boats, which could be easily controlled, Universal has developed a silent reduction gear for both the Flexifour and Super-four Motors, which permits these small light weight motors to turn large propellers, thereby making them ideal for cruisers and heavy boats. On comparative tests made with a 38′ heavy cruiser, the Universal Super-four 15–30 h.p. motor with the silent reduction gear, showed a saving of 14.8 cents per mile over the heavy, slow speed motor it replaced.



The new Universal Flexifour Model N, showing reduction gear.



The Super-four model GLS Universal with reduction gear.



Carburetor side of Universal Super-four model GLH.

The Dawn 38-Footer

The Dawn Boat Corporation, of New York City, will exhibit one of their stock 38-foot cruisers in a prominent position on the main floor. This is a fine looking, well built craft, with sleeping accommodations for six people, and powered with a 6-cylinder 65 h.p. Kermath motor. The Dawn 45-footer will not be exhibited at the show, but may be seen in the Dawn yard in New York at any time.

The Dawn 38-foot cruiser is well designed, comfortable, and an excellent sea boat.

Edson Steerers and Pumps

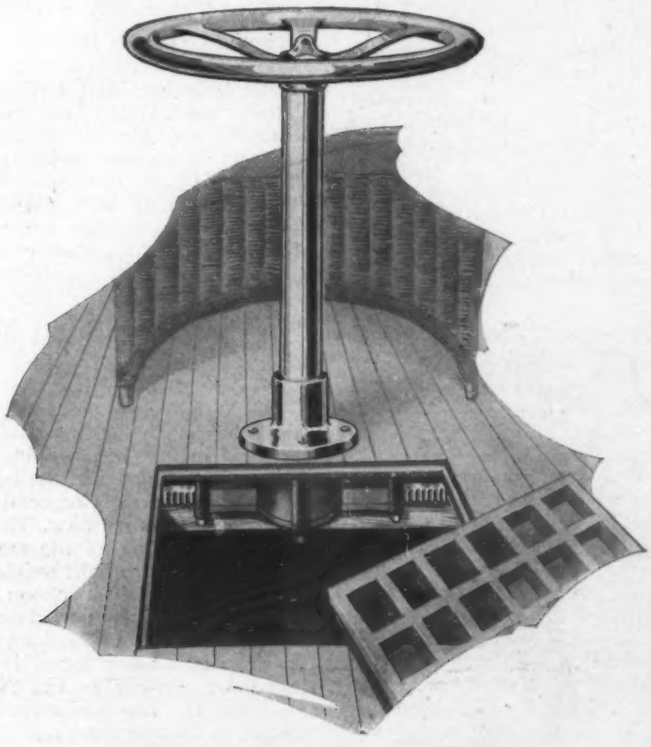
The Edson Manufacturing Corporation of Boston, Mass., known to all yachtsmen as makers of steering gears, will have an attractive exhibit in Space 55, third floor, where they will show a variety of steerers and pumps, boom buffers, etc. Included in the display will be the Edson screw steering gears and wheels, Combination Stand Steerers such as used on power yachts and auxiliaries, Bracket Steerers, Bridge Deck Steerer with auto type wheel, Oscillating Steerer, Simplex Steerer, etc. The same model Edson Bilge Pump as used on *Primrose IV* on her Transatlantic crossing will also be shown.

Hall-Scott Motors

The Hall-Scott Motor Car Co., of New York, a division of the American Car and Foundry Motors Company, will have a splendid exhibit of high class motors in a prominent position on the mezzanine floor. Included in the exhibit will be the HSM–6, 90–100 h.p. direct drive; LM–6, 200 h.p., Model F; LM–6, 200 h.p., Model G, with sliding gear type reverse; HSR, 175 h.p., with a ratio of 3 to 1, or 2 to 1, a new addition to the Hall-Scott line of reduction gear motors; HSR–6, 100 h.p., and HSR–4, 60–70 h.p. Hall-Scott are usually regarded as being leaders in reduction gear type motors, and all their 1927 model motors have added features and improvements.

Ford, Payne & Sweisguth

Ford, Payne & Sweisguth, well known yacht brokers and naval architects of New York, will occupy Space N, mezzanine floor, where they will exhibit a new model Diesel motor for use in small yachts. This new engine is made by the Fairbanks-Morse Co., and is full Diesel, 2-cycle type, bore 5¾", stroke 6½", and develops 40 h.p. at 650 r.p.m. The weight with reverse gear is 3550 pounds. This particular motor will be installed in the auxiliary schooner *Golden Eagle*, designed by Ford, Payne & Sweisguth, and now under construction.



Edson bridge deck power boat steerer.

Waterbury Ship Clocks

The Waterbury Ship Clock Co., of New York, will have an attractive display at Space 33, third floor, where they will show their complete line of ship and motor boat clocks. There will be striking clocks for the boat, the home, and the clubhouse, with various fittings to meet the demands and ideas of the individual. The Waterbury Co. is bringing out a new line of Ship's Bell and Motor Boat Clocks which can be used for desk clock purposes, which are sure to be of great interest.

The Great and Wee Scot

The two little sailing craft shown by the Milton Boat Yard of Rye, N. Y. are of great interest to the sailing fraternity. These are a Wee Scot, of which over a hundred were in commission the past season, and the Great Scot, a Marconi-rigged, 21-ft. keel sloop. Both are well built of good materials throughout, with mahogany trim, blocks and hardware of bronze, sails of Wamsutta duck and other equipment of like quality.

National Marine Lamp Co.

Yacht lights of all kinds, whether navigating lights, searchlights, interior lighting fixtures, oil or electric, will be found at Booth 65, mezzanine floor, where the National Marine Lamp Co. will have an attractive exhibit of all the different kinds of lights and lighting fixtures which are especially adapted to yacht use.

Models and Plans of Mower-designed Yachts

Charles D. Mower, naval architect and yacht broker, will occupy spaces number 202 and 203 on the third floor, at the head of the main stairway, and will exhibit an interesting collection of yacht models, framed enlargements and paintings of Mower-designed yachts.

Full rigged models will be shown of the well known Bermuda racer and offshore cruiser *Windjammer;* the schooner *Senora;* a 50-foot ketch now under construction at Nantucket and a one-design knockabout, both of the latter two being built by the Nantucket Boat Works; the schooner *Northern Light* and also a rigged model of the successful Class R racer *Ardelle.*

Mower-designed power yachts will be shown by a large full model of an 80-foot express cruiser together with other power boat models. A model and painting in color of an 86-foot shoal draft schooner now building will be shown. Also half models of many well known and successful boats of Mower design.

Mr. Mower will be in constant attendance at the show, with his associates Mr. Humphreys, Mr. Nevin, Mr. Waelder and Mr. Nedwidek.

Eldredge-McInnis, Inc

Eldredge-McInnis, Inc., naval architects and yacht brokers of Boston, Mass., will this year have an exhibit at Booth 84, third floor, where they will display drawings, blue prints, photographs and models of different craft of their design.

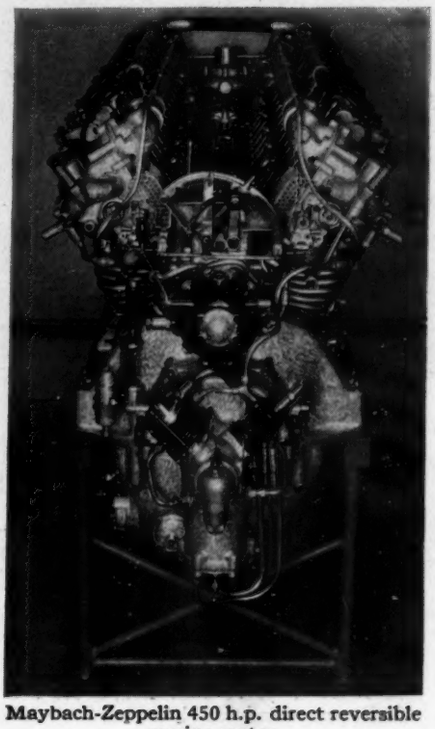
Dart Runabouts

Two snappy Dart runabouts, one of which was illustrated in our January issue, will be exhibited in Block F-2, main floor, by the Indian Lake Boat Co., of Lima, Ohio. The Dart 26-footer will be powered with a 150 h.p. Kermath motor, while the 22-footer will have a Gray 6-90 power plant.

Caille Outboards

Especially interesting to outboard motor enthusiasts will be the new 1927 Model Caille 5-speed Master Motor, manufactured by the Caille Motor Co., of Detroit. Listed at 4½ h.p., it actually develops close to 5 h.p. under actual brake test at 2600 r.p.m. The usual exclusive 5-speed feature will be embodied in the new motor, giving it the advantages of the valuable and safe neutral position for starting with two variable forward speeds and reverse speeds. A new type carburetor will be part of the equipment, with the dual ignition which proved so popular last year.

In spite of the great power which the motor develops, it is still conveniently light in weight, weighing only 52 pounds complete. While not a racing motor, the manufacturers state that in a light hydroplane a speed of better than 20 miles an hour has been attained. The new Caille booklet will soon be ready and may be had for the asking by writing the Caille Motor Co., 6210 Second Blvd., Detroit, Mich.



Maybach-Zeppelin 450 h.p. direct reversible marine motor.

Maybach Motors and Boats

The Maybach Motor Company, of New York City, will have a splendid array of boats and motors, the boats being in Block A-7, main floor, and the motors in Block X, second floor. The handsome Maybach 50-foot cruiser will be the center of attraction of the main floor exhibit, flanked by a 14-foot mahogany yacht tender with Universal Flexifour motor, a 12-foot mahogany yacht tender with Hallet motor, and two rowing dinghies. The motor exhibit on the second floor will consist of a Maybach 450 h.p. direct reversible gasoline motor, the new light weight, high speed 150 h.p. Maybach Diesel marine motor, and two Maybach gasoline motors of 110 h.p. and 68 h.p. respectively.

The new Caille 5-speed outboard motor.

China for the Yacht

A display of special yacht china at Ovington's booth is sure to attract cruising yachtsmen who appreciate taste and individuality in the appointments of their yachts. Attractive sets of china marked with the owner's club burgee and private signal are both pleasing and distinctive, and add much to the pleasure of guest and owner. The exhibit at the Ovington booth will show a number of the attractive designs which this firm turns out at moderate cost.

Edward Smith & Co., Varnishes and Paints

In booths 23 and 24, Edward Smith & Co., well-known varnish and paint manufacturers, have an interesting exhibit showing the enduring qualities of their different products. One of the most severe tests ever made of varnish will show boiling water flowing over a wire net cage to which two coats of Aquatite Varnish have been applied. Another test shows Escolac, the weather-proof lacquer, resisting the effects of water and the elements. This will consist of a brass tray half coated with lacquer and the other half tarnished. Water will run continuously over the tray during the entire show, proving that Escolac "Turns Polishing Days Into Holidays." A complete line of interior and exterior paints manufactured by Edward Smith & Co., which are becoming more and more popular with discerning boat owners, is also shown.

Belle Isle Boats

The famous Belle Isle *Bear Cats,* high grade, standardized fast runabouts made by the Belle Isle Boat and Engine Co., Detroit, will be seen in several models. Distinctly a gentleman's runabout, these boats, which are now handled in the East by S. Clyde Kyle, distributor, are among the finest at the Palace, and behind their design and manufacture are many years of experience in high speed craft.

Wright Typhoon Marine Engines

The Wright Typhoon Marine Engine, which has made such an enviable name for itself in fast boats under hard conditions, is to be seen in the booth of the Wright Aeronautical Corporation in space V on the mezzanine floor. These motors are of the V-type, of the most modern engine design. The light weight and high power of the Wright Typhoon have made possible two entirely new classes of boats in the pleasure and houseboat field, these power plants being found in such fast houseboat cruisers as the *Nashira* and *Zinganee II.* The performance in these motors in the fast runabout *Teaser* is too well known to need repeating.

New electric boat and sail hoist.

Three new electric deck auxiliaries exhibited by the American Engineering Co. Type H electric windlass with two wildcats and vertical head.

Electric davit winch.

Electric Windlasses and Hoists Exhibited by the American Engineering Co.

An entirely new line of deck auxiliaries and equipment for handling motorboats and yachts will be exhibited at the Motor Boat Show by the American Engineering Company, of Philadelphia. These will include hand and electric windlasses, electric hoists, davit winches, electro-hydraulic remote reverse control, hand and electric steerers and an electric refrigeration unit suitable for yachts.

The new electric windlasses and electric hoists are fully enclosed and self-contained, with the exception of one large hoist, so that they can be bolted down on deck without the necessity of cutting holes for shafts, or space being required below deck for electrical apparatus.

Control is by means of weather-proof snap switches, with "On" and "Off" indicators. The housings are waterproof and internal working parts are of bronze. It is claimed by the manufacturers that these machines are only one-half to one-third the size customary for machines of the same capacity and that they operate with motors of one-third the horsepower formerly thought necessary for equivalent duty.

The exhibit will occupy booths 101,102, 103, 104, 153 and 154 on the third floor of the Palace.

Hyde Wheels

Anyone interested in propellers should not fail to visit the booth of the Hyde Windlass Co., of Bath, Maine, for here will be found a full line of the famous Hywinco propellers for every type of boat and for every purpose. Included in this exhibit will be the Hyde Turbine Type Propeller, Hyde No-Weed, and Hyde Automatic Feathering propellers, besides a fine line of stuffing boxes, stern bearings, struts and rudder quadrants.

Buda Motors

The Buda Company, of Harvey, Ill., will exhibit three fine motors in a prominent space on the second floor. The first will be Model BM–6, a 6-cylinder engine of 4-inch bore and 5⅛-inch stroke, which the company recommends for cruisers up to around 36 feet in length. The second will be Model BM–6–S, another 6-cylinder motor with bore of 4⅛ inches and stroke of 5⅛, for runabouts and light cruisers where high engine speed and high boat speed is required. The third motor will be Model GM–6, of 4½-inch bore and 6-inch stroke, particularly suited to larger cruisers.

Oberdorfer Pumps

The complete line of pumps manufactured by the M. L. Oberdorfer Brass Co., of Syracuse, N. Y., will be exhibited in Booth 82, second floor, which includes bronze geared circulating pumps, motor and belt driven units, hand pumps, and the new Oberdorfer Automatic Bilge Pump.

Peerless Motors, and *Baby Peerless II*

The Peerless Marine Motor Co., of Buffalo, N. Y., will have an attractive exhibit of motors and boats at Space Y. The motors will be a Peerless 6-cylinder 75–150 h.p. medium duty engine, a 4-cylinder 50–100 h.p. medium duty engine, and the new 151 cu. in. racing engine. In addition, *Baby Peerless II*, a new 151-class hydroplane built of "rubber lumber," and having many unusual features, will be sure to attract a lot of attention.

Lockwood Twin Motors

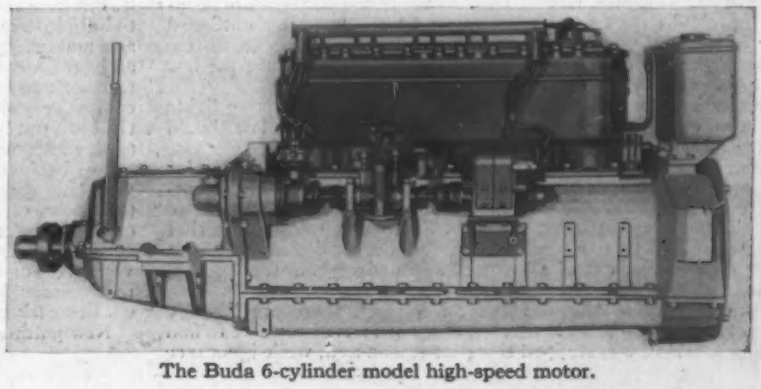
Lockwood Twin outboard motors, manufactured by the Lockwood-Ash Motor Co., of Jackson, Mich., will be exhibited in Space Z–2. Two new motors, for salt and fresh water, will be shown, with such new features for 1927 as the "Lockwood Pilot," which "takes hold of the motor when you let go," the Lockwood Water Guide, an improvement on the famous stream line design, and the placing of the control button of the magneto in the end of the steering handle. In addition, it is hoped that there will also be on hand the Lockwood Skimmer, a new 12-foot hydroplane type of boat designed, tested, developed and approved by Lockwood engineers, said to be capable of a 20-mile speed, and of better control and handling in rough water.

Frederick K. Lord

Frederick K. Lord, naval architect of New York City, will be on hand at Booth F-1, with a highly interesting exhibit, that of the all-metal cup winner, *Cigarette IV*, owned and driven successfully last season by L. Gordon Hamersley. Plans and photographs of numerous boats which Mr. Lord has designed will complete the exhibit.

New Jersey Motors

New Jersey Motors, Inc., of Keyport, N. J., will have a complete display of their motors at Space N, mezzanine floor. The motors which will be exhibited include Model 7, 15 h.p., with rear hand starter and magneto ignition; Model 7, with hand starter and Atwater Kent Type H ignition; Model 7, with electric starter, generator, and Atwater Kent ignition; Model 8, 20 h.p. engine, with rear hand starter and impulse magneto; Model 7 engine, disassembled and cut away for demonstration and explanation purposes.



The Buda 6-cylinder model high-speed motor.

Letters and Correspondence

Foolish Laws for Equipment of Outboard Motor Boats

EDITOR, YACHTING:

AS you are of course aware, the Navigation Laws of the United States were amended some time ago so as to apply to boats propelled by outboard motors, when exceeding 16 feet in length. In the writer's opinion, several of the sections of the law are absurd when applied to this class of boat, and should be further amended so as to conform more nearly to practical common sense.

Further, the law is not enforced universally or impartially, and consequently works a hardship on some while allowing others to violate all provisions of the law without being even warned.

Section 2 of the Act approved June 7th, 1918, requires each boat to be registered and to display a number on the bow. Registration being without cost effects no hardship, but it would seem to have a very doubtful usefulness, unless it were applied for the purpose of a tax. If applied impartially and consistently it would prevent one carrying a portable motor for use, say, on a fishing trip where the user expected to attach the motor to a row boat over 16 ft long, borrowed or rented at some distant point, providing the boat was then to be used on navigable waters.

Section 4 of the Act approved June 9th, 1910, requires that a suitable horn or whistle be carried, with a fine of $100 for failure to comply. Theoretically the larger boat is supposed to look out for the smaller, but anyone who has had much experience on the water soon realizes that it behooves the small boat to keep well clear of the large vessel. This means, practically, that a whistle is of use only when two small boats are approaching, and in such cases whistles would be about as much use as they would to approaching pedestrians. This section of the act imposes no particular hardship in carrying a whistle, but in the writer's opinion the usefulness of the whistle is practically *nil*.

Section 5 of the above act, requiring the carrying of ample life saving appliances is, of course, a legitimate requirement and should be enforced, but, judging from the writer's experience, the authorities do not consider it of as much importance as other sections of the law which are far more useless.

Section 6 of the above act, requiring the carrying of a fire extinguisher, is one of the most ridiculous sections, due principally to the type of fire extinguisher which is approved. The carbon tetrachloride and other types of chemical extinguishers are approved but, as anyone knows who has used chemical extinguishers, the theory is that the fire to be quenched must be confined so that it can be smothered by a blanket of gas which is non-inflammable and will not support combustion. Manifestly, if an outboard motor should catch fire any chemical extinguisher would be of no use whatever. It has been the writer's experience that the best fire extinguisher for use on a canoe or rowboat is a piece of old canvas or burlap which can be plunged in the water and then thrown over the fire with far more effect than would be obtained from any chemical extinguisher. If a piece of wet canvas won't smother an incipient fire in a rowboat it's about time to grab a life preserver and get overboard.

The Act approved Feb. 8th, 1895, requiring the carrying of two copies of the Pilot Rules, works no particular hardship for the owner of a rowboat and outboard motor, but at the same time it appears to the writer as one of the most absurd provisions of the law. Presumably the Pilot Rules are to be carried with the idea of promoting the safety of navigation. Manifestly, if the Pilot Rules are to be of any use the skipper of the outboard motor boat must have the experience and knowledge requisite to apply the rules intelligently. It has been the writer's observation that 90% of the operators of outboard motor boats are people who have never read the Pilot Rules and would hardly understand them if they did. If carrying Pilot Rules is to add to the safety of navigation, then the law should require that the skipper be able to pass an examination showing his familiarity with, and ability to interpret, these Rules. As we all know, there are thousands of children all over the United States handling outboard motor boats, and whether they carry the Rules, or do not, affects their safety and that of others not one iota. Why not make the law more consistent with the facts?

The requirements of the law as to carrying proper running lights at night no one has any quarrel with. This portion of the law should be enforced rigorously.

The writer has been handling yachts and boats of various types for 30 years and it would seem as though laws affecting the use of outboard motor boats should be consistent with the type of boat to which the laws are supposed to apply. Further, it would seem that such laws should be enforced impartially and consistently without picking off one man out of a hundred and making him the "goat", so to speak.

In the vicinity of Grand Haven, Michigan, there are literally dozens of outboard motors in use, but so far as I have been able to find out, only one man was stopped this past season and, while ignorance of the law excuses no one, it would seem that if a law which has never been enforced with regard to the type of boat in question is to be revived, then common courtesy would dictate that the first notification of a violation should be in the nature of a warning instead of the immediate imposition of a $500 penalty.

May the writer enlist your assistance in obtaining an amendment to the present navigation laws so as to protect the interests of one of the safest and most exhilarating sports there is, whether any rules and regulations are applied to it or not, and at least obtain exemption from carrying fire extinguisher, Pilot Rules, and from registration for any boat under twenty feet overall length?

BURRITT A. PARKS.

Cap Dingle Upholds "Manila Mike"

DEAR CAP STAN:

NOT guilty, Cap'n. I never said my Manilla Mike was the perfect self-steering gadget. And I never said I had to fiddle with it after the first adjustment had been arrived at. What I did claim, and still claim, is that most cruising boats can be made to steer themselves well enough to permit a short-handed crew or a lone sailor to eat and rest.

Fenger, and you, and I, and all of us would like to find the perfect self-steerer. Meanwhile I suggest that all short-handed cruisers whose boats are not yet perfection try a little patience and Manila Mike.

Luck to you.

DINGLE.

Claud Worth on "Salt Horse"

EDITOR OF YACHTING:

I HAVE read with great interest in YACHTING, November, the first installment of Mr. F. M. Gardiner's account of the fine passage of *Primrose IV* across the Atlantic. Mr. Gardiner is very emphatic as to the folly of taking "salt horse" to sea. If he refers to the beef supplied to sailing ships and cooked in sailing ship fashion, I quite agree. I struggled with it on alternate days during a voyage in square rig forty-one years ago, but have never eaten it since.

But salt beef of good quality, properly prepared and properly cooked I consider almost essential for an open sea cruise. If a man does not know what to ask for the butcher will not supply suitable beef. If he does not know how it should be preserved it will probably become tainted in hot weather. If he does not give the cook precise directions as to how it should be prepared and cooked even the best beef will be excessively salt and hard.

The best "Silverside" of beef (the part near the top of the leg) should be cut in pieces of about six pounds each, free from bone and with not much fat. For storing the beef we use large, square, glazed earthenware jars which we have had specially made. Mr. George Martin uses very large glass accumulator cells, which probably do just as well and would cost very much less.

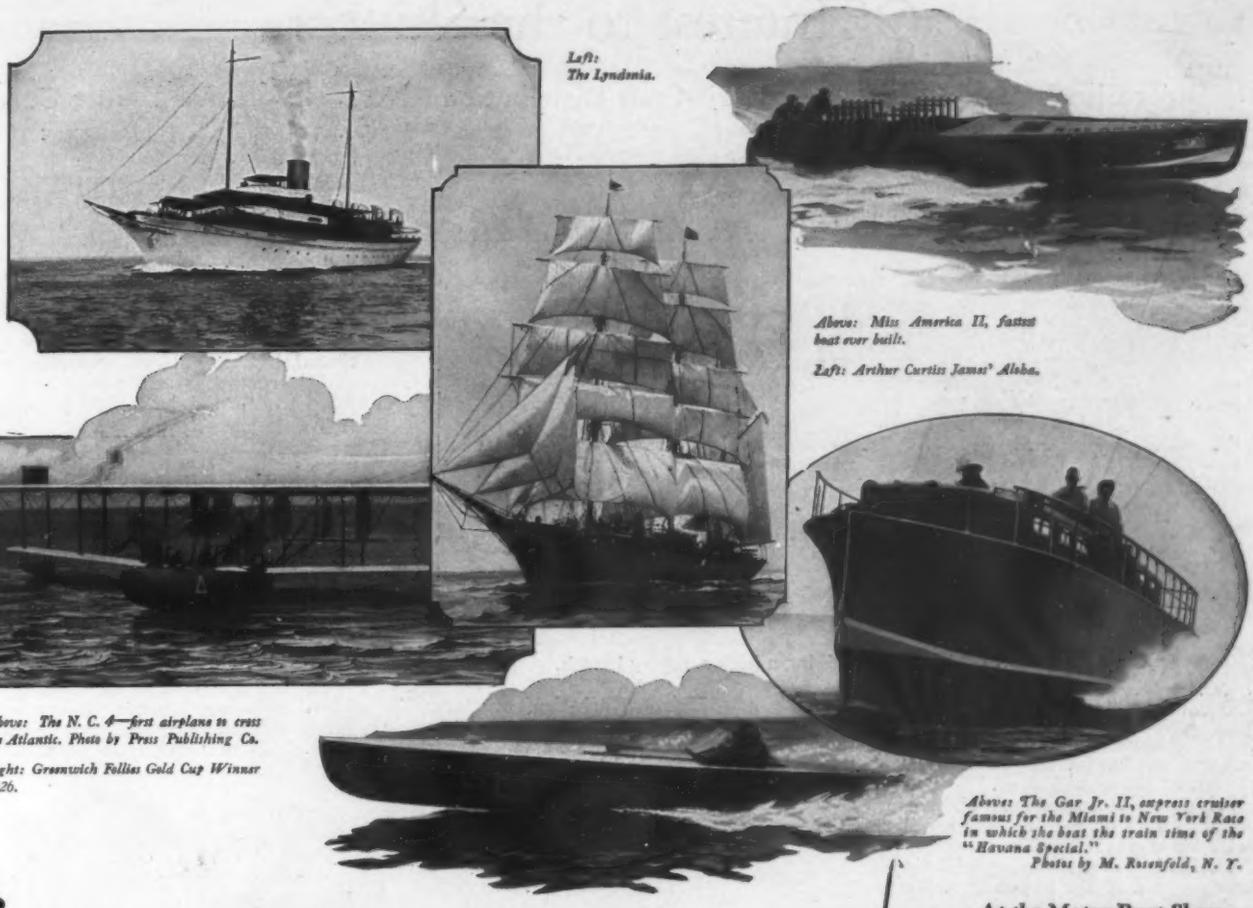
To make the pickle, dissolve salt in water until a peeled potato will just float in it, and add one ounce of saltpetre to every four gallons of the brine. Put the beef in the brine with a piece of hard wood about 1½ inches thick floating on top of the brine to prevent any part of the beef rising above the surface. If this precaution be neglected the fat side of a piece of beef will float just above the surface and become tainted and spoil the whole. The beef will gradually become more and more salt until at the end of about five weeks, when it will have reached the maximum and thereafter will not alter. Beef which has not been in the brine more than ten days will need no soaking. After that it should be soaked about an hour for every additional day up to a maximum of 24 hours. The last four or five hours' soaking should be in fresh water. Before that, salt water, changed from time to time, will do quite well, or in light airs the beef may be hung overboard in a net.

To cook the beef, put it in a good sized pot with cold water to cover it. Put it on the slow stove to heat very slowly. When the water begins to bubble take off the scum which rises to the surface. Put in the carrots and onions and "simmer" very slowly, allowing thereafter half an hour for each pound of beef and half an hour extra. Put in the potatoes three quarters of an hour before the end. The beef must be cooked very slowly and be never quite allowed to boil. After carving the beef, put it back to cool in the water in which it has been cooked, as this improves the flavour when cold.

Salt beef stew:— Take a piece of beef out of the brine and cut off very thin slices with a sharp knife. Wash the slices and replace the remainder of the beef in the brine. Use a "boilerette" or large covered stewpan. Slice the potatoes, carrots and onions and put them at the bottom, then a layer of the thin slices of salt beef. Put more vegetables on top. Add a large breakfast cupful of water and a dozen peppercorns. If desired a little Bovril or Worcester sauce may be added. Cook for two hours.

New potatoes, which are usually all one can get in summer, do not

(*Continued on page 98*)



Left: The Lyndonia.

Above: Miss America II, fastest boat ever built.

Left: Arthur Curtiss James' Aloha.

Above: The N. C. 4—first airplane to cross the Atlantic. Photo by Press Publishing Co.

Right: Greenwich Follies Gold Cup Winner 1926.

Above: The Gar Jr. II, express cruiser famous for the Miami to New York Race in which she beat the train time of the "Havana Special."
Photos by M. Rosenfeld, N. Y.

Every one famous— every one Valsparred!

IT is amazing to discover how many well-known boats have been Valsparred:

Miss America II, for example, the fastest boat ever built. Chris Smith, who built this remarkable speedster writes,* "All of our famous racing boats from *Reliance I* to the boats we are building today are Valsparred, of course."

Then there's Gar Wood's 50-ft. express cruiser, *Gar Jr. II*, which beat the famous "Havana Special," from Miami to New York; *Lanai*, international six-meter champion; Arthur Curtiss James's bark *Aloha*; and Cyrus H. K. Curtis's yacht *Lyndonia:* All were Valsparred!

And when it comes to flying ships of the sea, there's the *N. C. 4*, first plane to cross the Atlantic, Valsparred from wing tip to rudder's end.

So it would seem that on the pages of history the following story is indelibly written: "When makers of fine sea craft want the best in waterproof, weatherproof finishes, they use Valspar."

*In a letter to Valentine & Co., under date of April 26, 1926.

At the Motor Boat Show

Grand Central Palace, New York City, January 21st-29th. Be sure to visit the interesting Valspar exhibit in spaces forty-nine and fifty, third floor.

Lanai, winner of International Six-Meter Races 1925

VALENTINE'S VALSPAR
The Varnish That Won't Turn White

Of Interest to the Skipper

Super Elto Is Motor of Balanced Values

THE Super Elto Light Twin Outboard Motor for 1927 has been announced as the motor of "Balanced Values." Elto has come to mean Quarter-turn Starting, Stabilizing Rudder Steering, Portability with Durability, and Plentiful Power. It is the combination of these much desired features that has justified the application of the term "Balanced Values."

The Elto Light Twin driving a husky, roomy launch.

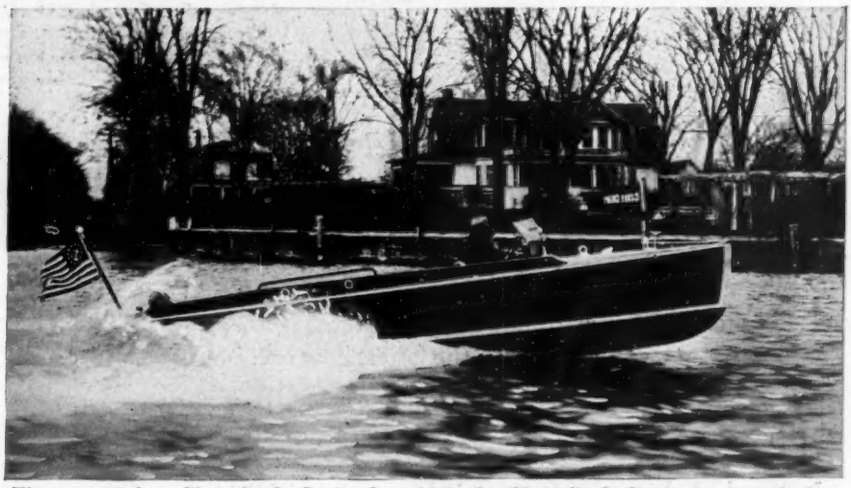
It is now thirteen years since Ole Evinrude began to work on the Elto. During all these years his efforts have been concentrated on the designing, production, development and improvement of the Super Elto. Naturally such application on the part of an engineer of outstanding ability has resulted in a highly perfected product, and in the most efficient and modern manufacturing methods, making an unusual value possible.

In the Super Elto for 1927 all of the features which have been responsible for Elto's tremendous one-model success have been developed to an even higher degree, and several highly important new advantages have been added. The Super Elto is not designed primarily as a racing motor, although on light hulls it is capable of developing racing speed. It is planned to be a general utility outboard for every outboard use and for the use of every member of the family. Its dependability, sturdy construction, waterproof ignition, quarter-turn starting and the fact that it can be controlled from any part of the boat make the Super Elto an ideal motor for every use.

Comfort, convenience and ease of operation are outstanding qualities of the Super Elto. And, after all, what features could possibly contribute more to the genuine pleasure of an outboard motor user?

Chris-Craft Distribution

For the year 1927, Chris Smith and Sons Boat Co., 393 Seventh Avenue, New York City, have scheduled an enormous production schedule for Chris-Craft runabouts. No fewer than 500 of the 26-foot Chris-Crafts will be produced, and the same number of the new 22-foot Chris-Craft Cadets. To properly distribute their product will necessitate their having dealers in the various water resorts throughout the country, besides show rooms and demonstrators in the larger cities. Reliable dealers are wanted in many localities. Arthur J. Utz, Director of Sales, invites correspondence on the subject, and will be in attendance at the Show.



The new 22-foot Chris-Craft *Cadet* for which the Chris-Craft Company is assigning franchises.

Erickson and Kainer Combine

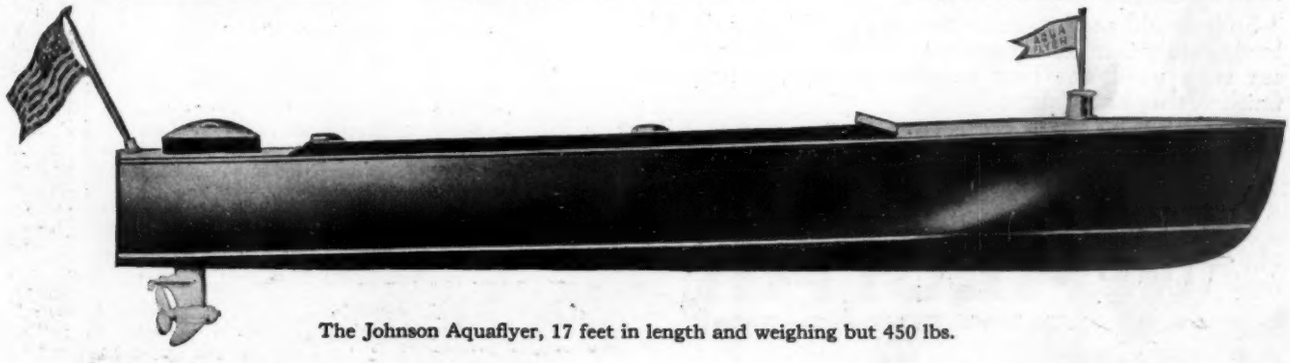
News has just been received that the Hubbard H. Erickson Co., of Chicago, manufacturers of the well-known line of Erico Electric Bilge Pumps, Searchlights, Running Lights, Shaft Logs, etc., have merged with the Kainer Co., makers of the famous Kainer Marine Specialties, under the firm name of the Erico-Kainer Co. The personnel of the new organization will remain practically unchanged. Not only will all the old lines of both companies be continued, but several new specialties as well, and the combined facilities will be far better fitted to care for the rapidly growing business.

New Johnson Outboards, and the Aquaflyer

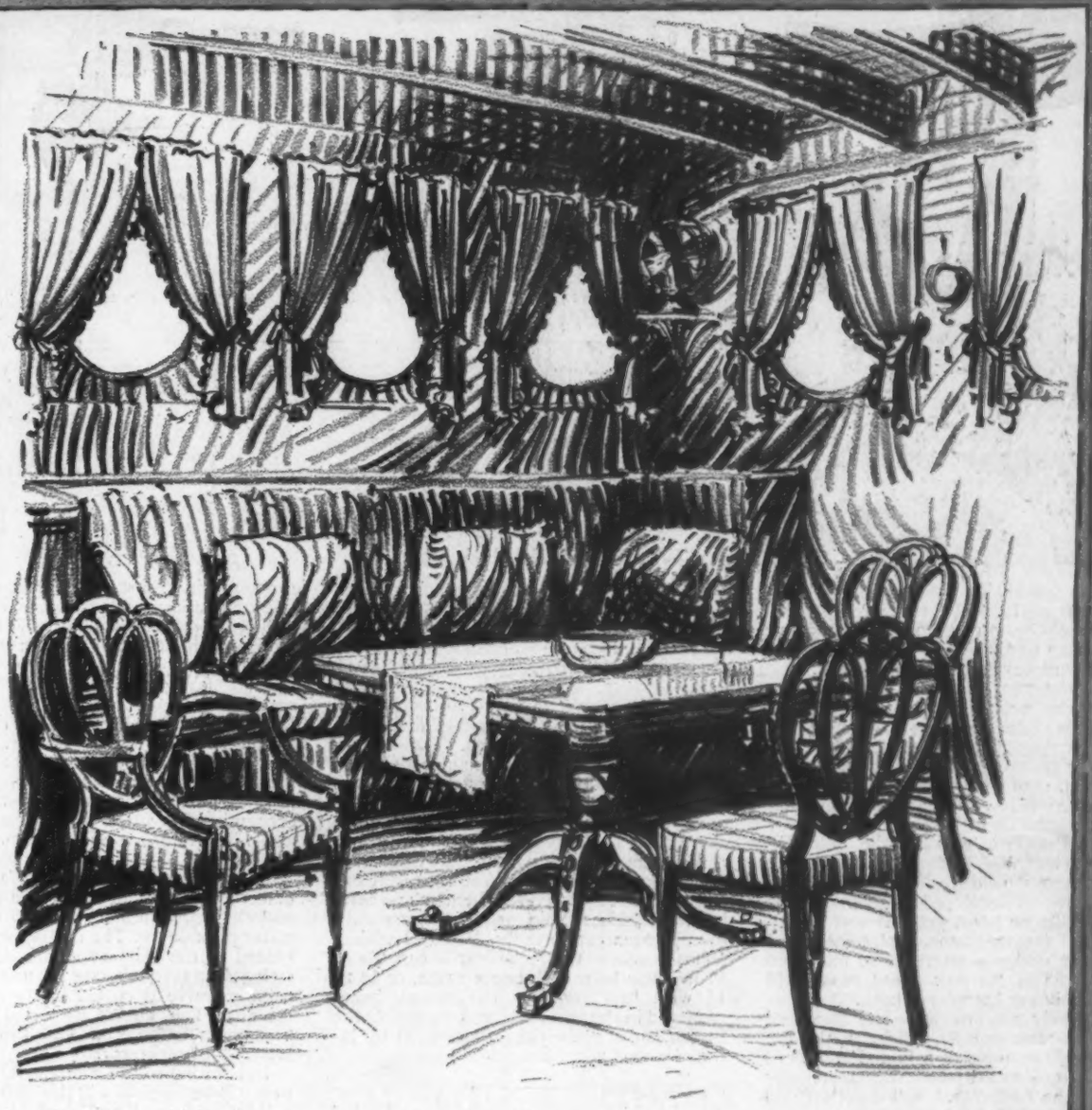
The Johnson Motor Company is announcing three new twin-model outboard motors for 1927, including a new Light Twin, a new Big Twin and, in addition, a new Standard Twin. With these new 1927 models come new mechanical advancements typical of Johnson designing and leadership.

For the first time in the history of outboard motoring, Johnson announces a complete outboard motor runabout — the Aquaflyer. This new runabout forecasts a new trend in water-motoring pleasures — an unprecedented standard of performance in small motored craft.

The driving or propelling force is increased 40% in the new Light Twin, due to a greater reduction gear ratio, and with a material



The Johnson Aquaflyer, 17 feet in length and weighing but 450 lbs.



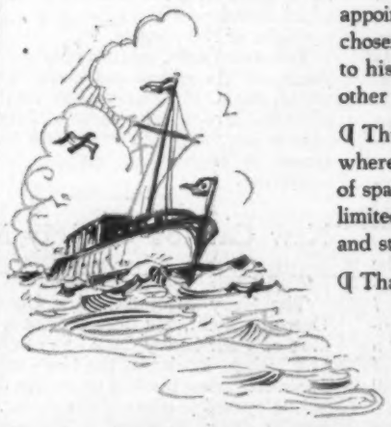
New York Galleries, Inc., Decorators

The experienced cruising yachtsman realizes that the deck and cabin appointments of his craft, when well chosen and arranged, contribute more to his enjoyment afloat than do any other features of the vessel.

¶ This is particularly true "below," where it is desirable to create an effect of spaciousness within the necessarily limited dimensions of the main cabin and staterooms.

¶ That this can be accomplished, with most gratifying results, has been demonstrated by this organization of decorators and cabinetmakers aboard such well known yachts as Mr. W. K. Vanderbilt's *Ara*, Col. Nicholson's *Sea Dream* and Mr. A. Y. Gowan's schooner *Speejacks*.

¶ Yachtsmen, designers and builders are always welcome at the Galleries, where a consultation regarding the decorative possibilities of either large or small craft will entail no obligation.



New York Galleries
INCORPORATED
Madison Avenue, 48th and 49th Streets

©INT. N Y G.

The new Johnson Big Twin.

The Johnson Light Single Model.

The Light Twin.

increase in power. The gear ratio has been increased from 19 to 14, to 24 to 14. The capacity of the carburetor has been increased close to 40% with the resulting increase in compression and horse-power.

Among the other features of the new Light Twin is the new stream-line lower unit which can withstand nearly three times more pressure or shock than could the 1926 Light Twin. The patented Pressure-Vacuum cooling system, used so successfully on the Big Twin during 1926, will be another big feature of the new Light Twin.

A new Big Twin replaces the 1926 Big Twin, which created such a sensation in the outboard motor field during the past year. The 1926 model developed a speed of better than 23 miles an hour, yet this new model, with a 21% greater piston displacement and a four-port design motor, has an increased power of 33%. Its new speed range will reach 27 miles or better, per hour.

An entirely new model — the Standard Twin — is announced which, with the Light Single, completes a line of outboard motors that offers the public the opportunity to select the motor that will exactly fulfill their own particular needs.

The Standard Twin is more powerful and faster than the Light Twin — making 20 miles per hour in racing trim. Yet, it is easily portable, weighing approximately 55 pounds. It is adaptable to large sized boats and racing boats.

NEW STANDARD IN OUTBOARD MOTOR BOAT PERFORMANCE

The new Johnson Aquaflyer is a revelation in outboard motor performance. It is a runabout, new in type — new in performance. It brings to the water luxurious comfort and easy riding qualities comparable to the automobile. In initial cost, in low maintenance and upkeep, in ease and simplicity of operation and control, it has no counterpart.

Low, racy lines mark the beauty of design in the 17-foot hull. Of mahogany throughout, it is ruggedly constructed to withstand the strains of rough usage. Yet, it is light weight, under 450 pounds — a factor fully appreciated when transportation or handling is necessary.

The staunch rugged construction of the Aquaflyer provides maximum safety. The broad beamed hull, 54 inches, and high freeboard afford protection from spray. The planking, decking, coaming and all trimmings are of durable Philippine mahogany, beautiful in appearance and capable of withstanding the most severe pounding of heavy seas.

The light weight of only 450 pounds, including the motor, is the result of design exclusive to outboard motors. The motor, weighing approximately 80 pounds, does not necessitate the heavy cumbersome construction common to the inboard type runabout, nor does it require the large amount of space characteristic of any inboard installation.

A spacious cockpit, with seats luxuriously upholstered, bespeaks comfort heretofore unknown in outboard powered craft. The seating arrangement is designed to accommodate four persons comfortably. Powered with a Johnson motor the Aquaflyer is capable of 17 miles an hour with two persons, or 14 to 15 with four persons. The motor, being mounted in the rear deck, makes possible the utilization of space usually occupied by inboard motor installations.

Dodge Announces a New Model

A new and quite revolutionary model is announced as an addition to the well-known line of Dodge Watercars. The new boat is to be a 30-footer, and will be known as Watercar Senior. Only twenty-five of them will be built during 1927.

This newcomer among the luxurious, standardized American marine runabouts will be fitted with a new six-cylinder model Globe engine, developing 250 h.p. at 1700 revolutions per minute. This power plant was designed by H. Alexander Johnson, well-known as the designer of the extraordinary hydroplane, *Yankee Doodle*, and other spectacular boats, in collaboration with Roland Chilton, chief engineer of the Aeromarine Company of New York.

The Watercar Senior is claimed to be the most elegantly fitted and appointed standard runabout yet built. With a beam of 7 feet 3 inches she will have roomy accommodations for 14 passengers and will make a speed of over 46 miles an hour. Deliveries of this new and interesting Dodge craft will begin on May 1st, at a list price of $7200.

The appearance of the new engine bearing the distinguished Globe nameplate will create much interest in the marine field. In a 50-hour nonstop official run to determine fuel and power characteristics at 1700 revolutions per minute, this motor came through with flying colors, no part being damaged or worn, or having to be replaced for any other reason.

The commercial model of this engine weighs 900 pounds, giving 90 h.p. at 1300 r.p.m. and ranging up steadily to 255 h.p. at 1800 r.p.m. Its gasoline consumption at full power is 20 gallons per hour. Its most economical operating spot is between 1600 and 1700 r.p.m., where its consumption is .48 pounds per horsepower.

The oil pump on Mr. Johnson's new Globe model handles 65 pounds of oil per minute and the water pump handles 70 gallons of water per minute. The cooling water is preheated in the exhaust manifold before entering the waterjackets of the motor and each exhaust valve is cooled internally and externally. The engine is fitted with two Stromberg carburetors and Delco ignition starter and generator.

In addition to the commercial model, the new Globe engine will be produced in a Gold Cup model and used in the Dodge racing boats. One of these, for example, the well-known *Nuisance*, owned by Delphine Dodge Cromwell, sister of Horace E. Dodge, president of the Dodge Boat Works, will have her present engine taken out in order to be fitted with the new Gold Cup Globe, which develops 300 h.p. at 2500 r.p.m. with a weight of 780 pounds.

The new Globe motors combine the best points of the oldest marine motor in the world, the Globe, which has established a remarkable reputation for reliability and surplus power, and the designer's long experience in high speed engine design and operation.

New Catalog of Gray Marine Motors

The Gray Marine Motor Company, of Detroit, Mich., has brought out a new catalog on their heavy duty line of engines, 50 and 75 h.p., known as the Gray model "H" book. This new book is profusely illustrated with all possible views of the motor, and with special drawings showing the accessibility and up-to-date features of this motor.

Notice the small angle on which the Dart planes. This is only one of the many features attracting favorable attention to the Dart.

DART Runabout and Junior

motor car speed and comfort on the water

GET away from congested highways; golf links are packed to the limit of their capacity for affording enjoyable sport; stuffy movie theatres are not healthy places to spend your leisure hours. Get out on the water!

A Dart Runabout (26-foot) or a Dart Junior (22-foot) satisfies the sporting instinct of every man who loves the water. Sleek as a greyhound; speedy as a whippet; sturdy as a blooded bull; as easily managed as a fine motor car. You'll be proud to own a Dart.

Dart alone features many principles of construction which make it the strongest power boat of its kind that you can buy. When you get under way you will appreciate what these features mean. The power plants best adapted to the Dart are the Scripps 100 h.p., Scripps 150 h.p. and the Kermath 100 h.p. or 150 h.p. Any one of these motors requires sturdy boat construction such as is built into the Dart. This assures several seasons of enjoyment.

Don't let another season pass without a Dart. Let us give you complete information, specifications, prices and everything you want to know. Then compare the Dart with other craft in her class. Write the Indian Lake Boat Company, Inc., 348 East High Street, Lima, Ohio.

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MIAMI, FLORIDA
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The DART RUNABOUT
also Junior and Outboard

"THE CAPTAIN TOLD THE MATE,
The Mate, he told the crew,
The crew told me, so I know it must be true."

"There's a big change in the cooking and a bigger change in the cook since we shipped that Westinghouse Marine Range. The meals are better cooked and right on time. You never taste ashes in things any more. The cook's givin' hisself airs, but good-humored—my word!

"Well no wonder cookee's pleased! No ashes, no dirt, no fires to mind, cookin' heat for everything at a snap of his fingers. That jigger's even got little rails on the top to keep pots and pans from shiftin in a blow."

The nearest Westinghouse Office will gladly give you complete information about Electric Cooking Equipment for Marine Use

Westinghouse Electric & Manufacturing Company
East Pittsburgh Pennsylvania
Sales Offices in All Principal Cities of the United States and Foreign Countries

Westinghouse

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The Dhow Type

(*Continued from page 42*)

nels or crowded harbors. But I hope eventually to incorporate it as a part of the deadwood so that it can be locked in its central position by means of a heavy pin entering the upper hance from the horn timber above it. I have an idea that the hull will heave to very close to the wind, and that she may even lay bow on, under bare poles — tailing away before it as *Yakaboo* did when her board was shoved far forward. In this event, it would be a decided advantage either to house the rudder completely, or to be able to *reverse* it. But one must avoid complication of gear. An ideal solution would be to cut out a long narrow section from the stem and incorporate a bow rudder.

But the initial concrete step is now before you. Under the diagonals are shown the modified Colin Archer curve for the hull alone, and the total displacement curve, in solid lines. The broken curve is the versed sine and trochoid form, with its high point centrally located. A 30-inch model is now being made and will be tried out as soon as is practical, both with the normal jib-headed ketch and the "Main Trysail" rig which has already been described in YACHTING of August, 1926.

What results will be forthcoming, are entirely open to speculation. Should they prove of any value, they will be frankly discussed in a further article, and if there be any promise of success, the next step, which is already taking its course on paper, will be made.

While it is unwise to make any sort of prophecy, there have been certain indications in the past few years, both in experience and in theory, that an experiment in this direction — that is, of advancing the center of buoyancy from its old position somewhat abaft of midships, to amidships or even slightly forward of this point — might produce a type of hull with new and desirable elements. The self-sailing part of it would be a mere corollary, yet a welcome one, as it would add a new fascination to ocean cruising in which the small fellow — who seems to do most of it, and is never overburdened with crew — would be relieved of many onerous hours at the wheel. Hours which he might give over to the engaging pursuit of offshore navigation, the pleasant chores of sailorizing, the leisurely re-reading of his favorite books in the lee bunk, puttering over his favorite brand of burgoo, or just dreaming — sort of — and thinking of nothing at all, but feeling that he is damn glad to be alive.

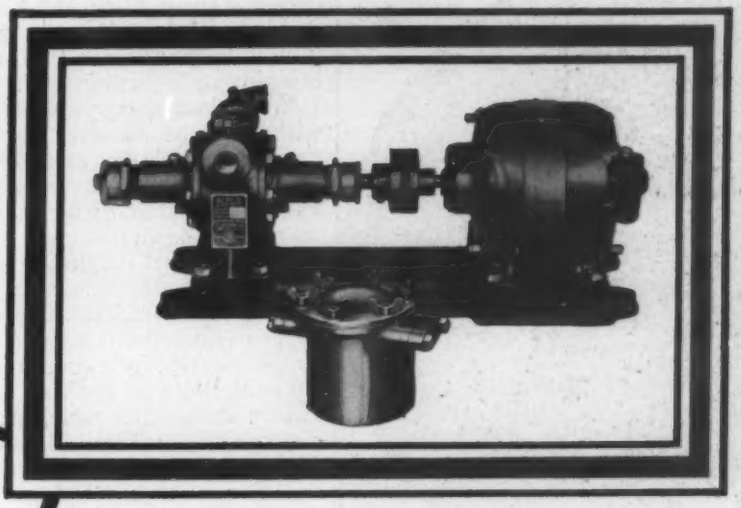
Gentlemen, here's hoping.

The Cruise of the *Geryon II*

(*Continued from page 46*)

entire trip, but I think it was then that it caught a lasting hold. Certainly it has not loosened in the slightest since that time.

Then we ran into two days of calm, interspersed with occasional breezes in which we slowly worked toward Beaufort. It was cold and rainy, but we were sold on the sailing game. About noon of the third day we figured we were pretty close to Beaufort. The shore line was in view and from its general curves we thought we could place ourselves. Then a haze in the sky dead ahead began to indicate the presence of a city, so Tommy, being more or less inclined toward athletics, decided to go aloft. He reported the city we were looking for, but also said things were far from promising in the way of clouds in the east. After due inspection we agreed, and also noticed that the wind had picked up. Then Tommy reported plenty of breakers off Beaufort. The channel into the harbor there is a fairly delicate proposition, so I went below to get the motor ready.



For every type of boat

SIMPLICITY is the keynote of the design of this rotary pump.

The working member is a cylindrical rotor rigidly secured to the shaft, having cam faces opposite each other, separated by stationary partitions.

As the shaft rotates, the liquid is simultaneously sucked in and expelled as the high points of the cam faces pass the ports. There are two of these impulses per revolution, which, together with the high driving speed, assures a non-pulsating discharge.

That's all there is to it. But with this hitherto undreamed-of simplicity is attained a type of construction that makes this pump ideal for bilge, circulating water and lubricating oil service, as well as for deck flushing and fire fighting.

High-speed, direct connected, vibrationless and noiseless, this is the pump you have been looking for. Send for descriptive bulletin.

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ROTARY PUMPS

A Big Husky CRUISER, ABLE and SEAWORTHY.

"28" Matthews

Now for the first time a Matthews Company built cruiser of small size and low price class. Many things had to be considered before undertaking the job. There was reputation, acquired through 36 years of building fine pleasure craft, at stake. It is only now after months of consideration and months of trials and tests that determination has come to build it in large numbers.

The Matthews "28" (length 28′ 10″; beam 10′; draft 2′ 10″ and headroom 6′ 1½″), is heavily built and finished to a nicety characteristic of all Matthews craft.

The Matthews "28" is a real yacht, a boat to be proud of in any waters. Salt water constructed throughout.

The Matthews "28" is a worthy companion to the Famous Matthews "38".

See the Matthews "28" and popular Matthews "38" on permanent display at New York Show Room, Bruns, Kimball & Co., 54 West 17th St., New York; or Boston Show Room, Walter H. Moreton Corp., 1045 Commonwealth Ave., Boston. For descriptive, illustrated literature write —

THE MATTHEWS COMPANY
Builders of the **FAMOUS MATTHEWS "38"**
PORT CLINTON, OHIO ... U. S. A.

But it refused to be made ready. Already having proven its temperamental characteristic, it gave final emphasis then and there. Steve and I talked over the possibilities of making a sheltered anchorage, but did not favor such an undertaking. And the wind was increasing every minute, bringing up a pile of unmistakably ominous clouds.

We picked up our outer buoy and headed for it but not without some concern. Tommy was still aloft, having caught the cat's eye, and was trying to coax the animal up the mainsail. With much waving of arms he did get the Pootch almost half way but no further. At last he gave it up and slid down to deck.

As we turned the first buoy and started to trim sail for our zig-zag course in, we noticed a power boat coming out from the harbor. A tow in seemed the reasonable thing, in order to hurry matters, and also to insure that we stayed in the channel, for a good sea was running by this time and breakers were on both sides of us. The big launch came closer, swung alongside, a uniformed individual saluted us, two sailors threw a hawser to us, which we automatically made fast forward. We hadn't said a word.

"Coast Guard, sir," was bellowed at us by the uniformed individual. "Better lower your sails right away. It's going to blow."

By this time we knew how to act in a hurry. With plenty of spare line from the launch we came into the wind in a jiffy, mainsail halliards were let go, down came the canvas, the crotch was in place and the sail was roughly furled in no time. What a contrast that was to other attempts we had made. The jib followed, and as the launch took up the spare hawser the jigger dropped. We were under critical eyes, but we were fairly satisfied. Within a half hour we were anchored just off the city of Beaufort, not 50 feet from where we had been in December. Not being familiar with the Coast Guard service, we were in a quandary whether to ask for a bill, whether we could just tip the captain or whether a drink of genuine Bacardi rum might not fill the bill. At any rate, we had plenty of questions to ask and were about to hail the captain when he swung alongside with a paper in his hand and jumped on deck. We all went below and the first thing was a chorus of "How did you happen to come out just when we needed you?"

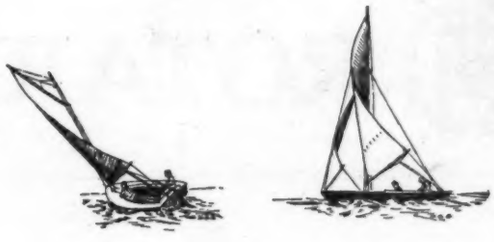
"Why, we caught your signals and figured you were in trouble," answered the captain.

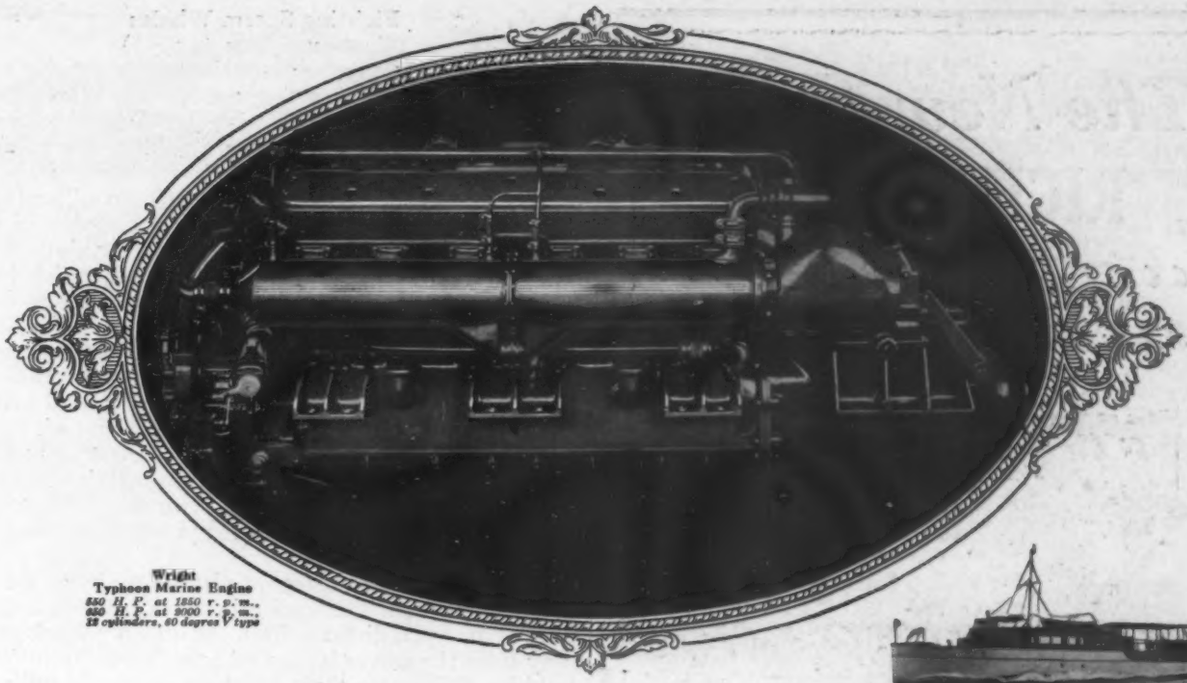
"Signals?" we asked.

"Sure. The man on watch saw one of you aloft waving his arms. In fact, we had you picked several miles away. What's matter? Motor dead?"

It was too good to keep. The party was on us. We explained the reasons for Tommy's antics on the spreaders and admitted we had never thought of the Coast Guard or of flying distress signals. But without that tow in, we might easily have piled up on a number of shallow spots. It was a good laugh all around.

From Beaufort to New York was without much excitement. Pamlico Sound kicked up a nice sort of farewell blow for us that kept us busy and gave us a final thrill, for the shallow water made seas that seemed to be straight up and down. However, we were well acquainted with the old *Geryon II* by this time and only found it more enjoyable to bid adieu to the open sea in such fashion.





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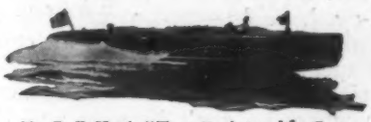
Typhoon Marine Engine
850 H. P. at 1850 r. p. m.,
650 H. P. at 2000 r. p. m.,
12 cylinders, 60 degree V type



Mr. R. F. Hoyt's "Teaser", designed by George F. Crouch, built by Henry B. Nevins, New York, powered with a Wright Whirlwind Engine. Unquestionably one of the fastest boats in the world

Express Day Cruiser, yet unnamed, built by Henry B. Nevins, New York, from designs of Tams & King, New York, powered with two Wright Typhoon Engines to maintain a speed of about 45 miles per hour

THE SYMBOL OF
SUPERLATIVE SERVICE

Revolutionizing Marine Design

THE light weight and high power of Wright Typhoon Marine Engines have made possible two entirely new classes of boats in the pleasure and houseboat field.

During the past two years the development in design for comfort with speed and luxurious roominess has been possible through the installation of Typhoon Engines, as attested in the accompanying photographic reproductions of representative yachts in the private commission of well known owners.

Mr. G. M. Dahl's house-boat cruiser "Kegonsa", designed and built by Consolidated Shipbuilding Corporation, New York, average speed 30 miles per hour, powered with two Wright Typhoon Marine Engines

Mr. Marshall Field's commuter "Curlsande", designed and built by Gar Wood, average speed 37.2 miles per hour, powered with two Wright Typhoon Marine Engines

Mr. E. S. Moore's "Zingaree II", designed and built by Consolidated Shipbuilding Corporation, New York, an express cruiser, speed of 30 miles per hour, powered with two Wright Typhoon Engines

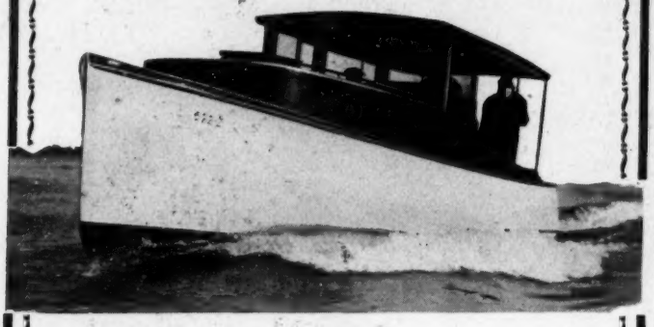
Mr. R. F. Hoyt's "Nashira", 81 ft. cruising house-boat, speed 28 miles per hour, designed and built by Consolidated Shipbuilding Corporation, New York, powered with two Wright Typhoon Engines

WRIGHT AERONAUTICAL CORPORATION
Paterson, N. J., U. S. A.

BULLETIN No. 10 with interesting general information and technical description of Wright Typhoon Engines, will be forwarded on request. Send for it.

WRIGHT TYPHOON MARINE ENGINE

The New Boat!
RICHARDSON
"Cruisabout"



26 FEET OF SUPERLATIVE VALUE FOR $2885

EVERY idea of cruiser value you have ever held will be changed when you see the new Richardson "Cruisabout" — a boat of speed and style that sets a new pace in the field of the Standardized craft because it has been created by the master boat builders of the Richardson Boat Company.

There is character and individuality to this boat as well as comfort and sturdy seaworthiness. The new "Six-40" Gray Engine — a sweet running six cylinder motor — provides ample power and the brisk clip of eleven miles per hour. A roomy, restful cockpit and a well appointed cabin for four, provide splendid accommodations for long distance cruising.

See this marvel boat at the show — Block B7 — or write at once for complete descriptive details.

RICHARDSON BOAT COMPANY

380 Sweeney Street

NORTH TONAWANDA, N. Y.

Fighting Sperm Whales

(*Continued from page 33*)

drifting slowly along, and the lookout's regular cry of "Blows-Ah-Blows" signaling the spouts. When about a mile away the whale curved his gigantic back well out of the water, something like a man making two tries for a handspring — "rousing" we call it. Then from aloft rapidly followed the shout, "There go flukes," and he disappeared almost perpendicularly in a smother of foam.

No concern was felt, for it is almost a certainty that his reappearance will be on the same course which he was traveling when he sounded. It is even possible to foretell with accuracy the length of his absence. This fellow took about an hour, we timed him by watch on his first submersion, knowing well he would come up to the minute the next time. So, on his second rising his great head and back appeared in an almost straight line fore and aft between Swain's, the chief mate's boat, and Peckham's, the third's. They were men between whom a strong rivalry existed, not an uncommon thing between two men engaged in the same pursuit, especially when the younger is crowding the older.

Above, the sun shone from a clear blue sky on a rushing and breezy ocean. The leading boats with their silent crews were at an equal distance from the quarry, on whose great grey sides the waves lapped, then rolled away in foaming bubbles. He was nearly 90 feet long and in the full pride of strength and vitality. Mr. Swain's boatsteerer, a thoroughly practical, keen-eyed, cool-headed young fellow (with an eye to the main chance for profit of all concerned), was the first to speak, calling to his officer, "We are right ahead of him, sir; this is Mr. Peckham's chance, he is right behind him where he can't be seen and he surely will see us before we get there." (A whale's eyes are set above the angle of the jaw and a slight turn of the head and body brings his vision, which, at close range, is strictly lateral, to bear forward.) But you cannot keep a man from his fate.

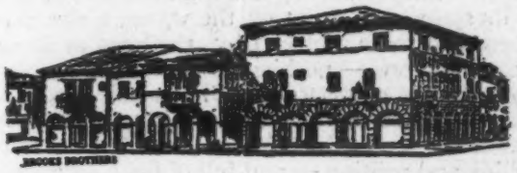
"I don't care a damn," roared the mate, "I am going to take him," and suiting his action to the words he first signalled the third, who took in his sail, standing by with his oars, then faced the monster. They approached rapidly, the whale's head and the sharp stem of the cleaving, on-rushing whaleboat meeting and sliding by, then, side to side, and almost touching. Farther yet forged the stem, the mate hoping to deal the blow in the "life mark."

"Give it to him," came the hoarse command, and at that close range two harpoons were driven below the hump with all the willing power of a strong and practised arm.

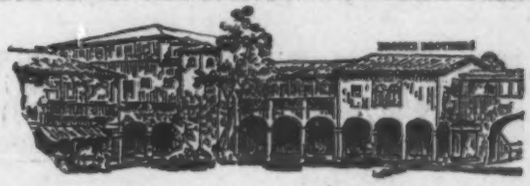
The agony of the stabs galvanized the monster into action; and his action was worthy of his power and size. From the *Morgan* I could see only those terrible ponderous flukes towering, the central point of a seething circle of white water. In an instant the boat shot clear of the commotion, sail down and a waif up.

"A stoven boat," I thought. Then a second waif appeared. "An injured man" — there could be no other meaning. I swung the ship off, squared the main yard, set the foresail, and we bore down to leeward to render aid. It was clear that we had met a foeman worthy of our steel, for, when high spirited and a fighter, the hunted sperm whale presents a peril as great as the sum of his size and speed and strength.

We rounded to about an hundred yards from the stoven boat with fore yard aback. Meanwhile, the second's boat advanced — for there was need of attracting the brute's attention away from the disabled crew. Two more irons were flung and again the scene became a maelstrom of seething, swirling, circling white water, that terrible tail with its broad spreading flukes thrashing and flailing with savage ferocity. Again came a lull in the combat, and on



The Plaza Building, Showing the PALM BEACH *Store*



View from the Patio of the Plaza Building

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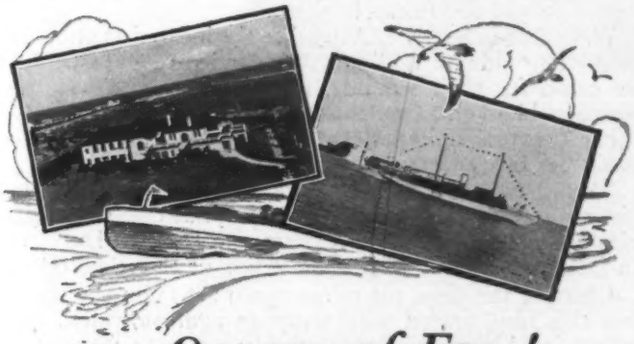
MADISON AVENUE COR. FORTY-FOURTH STREET

Brooks Brothers

The Plaza Building
County Road
Palm Beach

BOSTON
TREMONT COR. BOYLSTON

NEWPORT
220 BELLEVUE AVENUE



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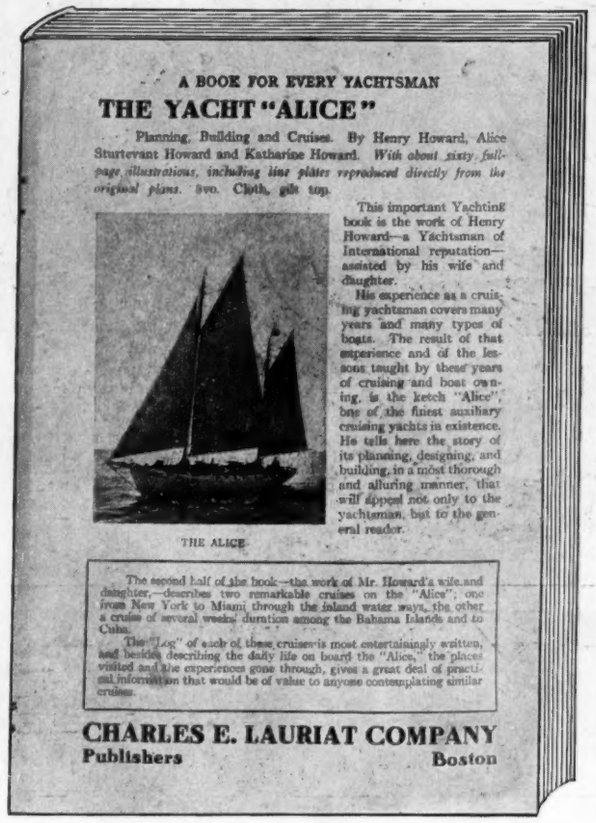
LOW PRESSURE—SURFACE IGNITION
SOLID INJECTION TYPE
OIL ENGINES
6 to 600 H. P.


A BOOK FOR EVERY YACHTSMAN
THE YACHT "ALICE"
Planning, Building and Cruises. By Henry Howard, Alice Sturtevant Howard and Katharine Howard. With about sixty full-page illustrations, including line plates reproduced directly from the original plans. 8vo. Cloth, gilt top.
This important Yachting book is the work of Henry Howard—a Yachtsman of International reputation—assisted by his wife and daughter.
His experience as a cruising yachtsman covers many years and many types of boats. The result of that experience and of the lessons taught by these years of cruising and boat owning, is the ketch "Alice", one of the finest auxiliary cruising yachts in existence. He tells here the story of its planning, designing, and building, in a most thorough and alluring manner, that will appeal not only to the yachtsman, but to the general reader.
THE ALICE
The second half of the book—the work of Mr. Howard's wife and daughter,—describes two remarkable cruises on the "Alice"; one from New York to Miami through the inland water ways, the other a cruise of several weeks' duration among the Bahama Islands and to Cuba.
The "Log" of each of these cruises is most entertainingly written, and besides describing the daily life on board the "Alice," the places visited and the experiences gone through, gives a great deal of practical information that would be of value to anyone contemplating similar cruises.
CHARLES E. LAURIAT COMPANY
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WE should like every Yachtsman and prospective Yachtsman to have a copy of this absorbingly interesting and useful publication as a "text book" on how to plan, build and equip a seagoing and seaworthy auxiliary cruiser — the real pleasure craft. It sells for $5.00 and that's cheap but as long as our supply lasts you can have one free of cost. Write us at once for your copy or you will be disappointed.

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the edge of the whirlpool, lifting and falling, could be seen a sail and its spars spread out on the water, a sweep or two, and here and there a black spot, the head or shoulders of one of the crew — nothing more.

I was now drawing closer to them. The whale remained at the scene of the second encounter lying almost level with the water through which his bulk could be plainly seen, watching and waiting — and full of fight. Occasionally when the irons pricked deeper in his side with the motion and pull of the trailing lines he rolled and thrashed.

I signalled the return, for our first care must be the injured. One by one the boats came alongside. Peckham had saved all men from the destroyed boat, but the 2nd mate was unconscious and one man was wounded. The fourth reported no mishaps, and all hands stood by anxiously awaiting the return of the first's boat, which approached slowly. One short — still he might be lying hurt — no, there was surely one man missing!

"Anyone injured, Brown?"

"Mr. Swain, sir, he was knocked overboard, the flukes caught him I think, he had hold of the tiller and it's broken off short. Steering oar broken, too, sir. I cut the line and we searched everywhere. We found his hat floating, but no other trace."

So there it was, and poor Swain would never again hear the bells or see the welcome shore of old New Bedford. His was a case where the influence of fate or chance — call it what you will — seems to have been far stronger than any poor human mind could have foreseen, or in any way affected. A man of nearly fifty years, married, he had gone whaling in his younger days only to settle down on shore (as he thought) for the rest of his life, his occupation being that of a coach driver between New Bedford and Dartmouth. As commonplace a matter as street railway competition and the lure of high wages had driven him whaling again, only to perish thus tragically in the far reaches of the Pacific!

What was to be done? Attend to the injured at once and then we would see. Willing hands carried them below and we cared for their wounds, rubbed them and wrapped them in blankets. One man was detailed as nurse. On deck, the tangle had been straightened out and once again the boats were ready.

"What now, sir?" said the boatheader, "shall we try him again?" "Yes," I replied, "use your oars. You take him on his left side and Peckham on his right. Don't try to fasten, but bomb him, both of you at the same time."

Clearing the ship, the crews again set upon the whale, but this time armed with weapons against which, poor fellow, all his courage and mighty strength were of no avail — he was doomed. Ranging alongside from behind, and at a point blank range, Peckham fired, the bomb entering perhaps a little too far ahead for the "life mark," but near enough, for immediately following the explosion the great head dropped, and the great body rolled, exposing the whole of the left broadside, into which, just at the round of the belly, with merciless and deadly accuracy the boatheader in the second boat fired, the bomb bursting almost in the chambers of the heart.

"You will destroy no more boats," sung out the boatheader as the whale sounded, seeking once again the depths of the ocean. But the awful air hunger had to be satisfied, and again he rose, rushing forward, snapping his jaws, head lifted high, pushing a little wave ahead; he vomited and purged, and the thick dark blood rose rhythmically from his spout. Three times, for so strong burned the flame of life within him, did he complete that circle, game to the core, more and more slowly rolling, and more and more feebly righting himself; then the current of his life blood ceased to flow, the jaw fell, and the poor dry spout hole frenziedly opened and closed with his last gasps, until death was upon him, and he rolled upon his side, "fin out" — for the last time.

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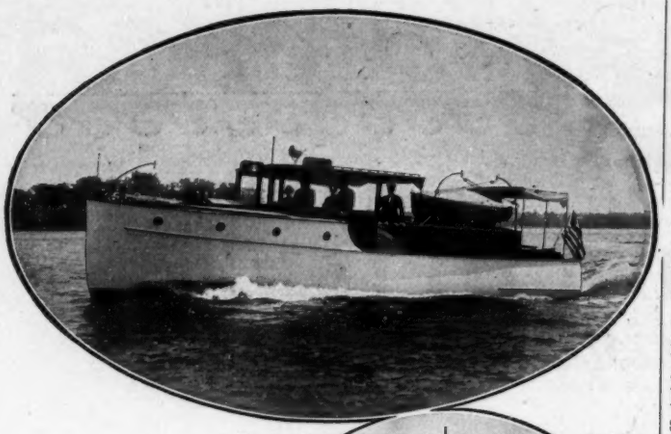

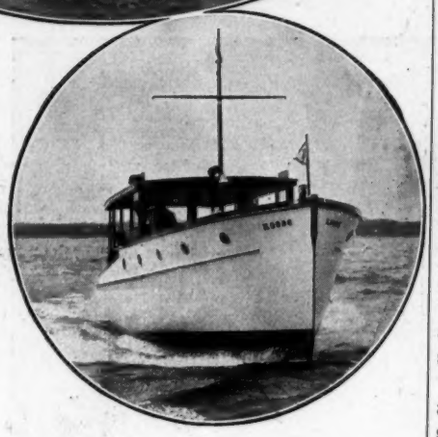

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DAWN CRUISERS

Your Propeller

(*Continued from page 54*)

BLADE CONTOUR: The evolution of blade contour to its present high state of efficiency has followed the development of marine steam turbines and high-speed marine gasoline engines, also marine electric drive.

This propeller problem was solved largely by perfecting blade contour in conjunction with the proportioning of the pitch ratio. The present-day elliptical blade, with the maximum blade width proportional to the diameter, and this widest part located at some fixed point in proportion to the diameter, was the solution of the propeller problem for high rotative speeds.

In these propellers the greatest width of blade is usually from 25 to 40 per cent of the diameter, although in very large diameters the width is rarely in excess of 33⅓ per cent. When used for towing or for low-speed heavy-duty engines, modification of blade contour gives a square end with the widest part of the blade nearer its extremity, the contour of the entering and trailing edges being practically symmetrical.

In Fig. 3 are shown the outlines of three blades of the elliptical type, each of approximately the same expanded area, but of different widths. This drawing is made to scale and well illustrates the development of the elliptical blade in its transition from low to high speed application, the narrow blade having a larger diameter with a lower pitch ratio for high speed, with resultingly increased projected blade area, while as the diameter is lessened and the pitch ratio is increased, the projected blade area is less as the speed of rotation is reduced, as in low and medium-speed engines.

Fig. 4, in like manner, shows the outline of a blade of a propeller used for heavy towing duty and that of a similar elliptical blade of slightly greater expanded area. This should explain something of the reason for the greater power exerted by the square-end blade with the greatest width of the blade nearer the outer extremity.

In some of the earlier types the entering edge of the blade receded considerably from the front end of the hub while the trailing edge extended considerably beyond. There are two main objects in this design, one being to increase the effective blade area near the outer end of the blade, and the other to compensate for the necessity of employing a higher pitch ratio, on account of insufficient room to swing a propeller of larger diameter.

This type was found fairly well adapted for general use on motor boats in its standard blade widths, but it was not especially effective for backing or going astern, although it acted well enough in "snubbing" the boat, as when picking up a mooring or making a landing.

This type of propeller is one not adapted to high-speed installations, for it is likely to cause unpleasant vibration from excessive blade width if rotated at too high a speed.

BLADE SPACING: Irregular blade spacing is always a serious defect in propellers, and is often to the power boat analogous to a flat wheel on a trolley car, a disturbing element, to say the least.

It may be the result of defective casting, careless machining or attempting to cast from stock propellers regularly marketed by reputable dealers under their trade name. Whatever the cause, there is no excuse for appreciably imperfect spacing, except the product be sold at a much lower price than commanded by similar products trade-marked and guaranteed by reputable manufacturers.

PITCH BALANCE: A propeller is said to be in pitch balance when the blades are accurately spaced, and each blade is alike in pitch throughout its entire surface, at every diameter.

Pitch balance may be summed up as pitch regularity. Without pitch balance the higher the rotative speed the

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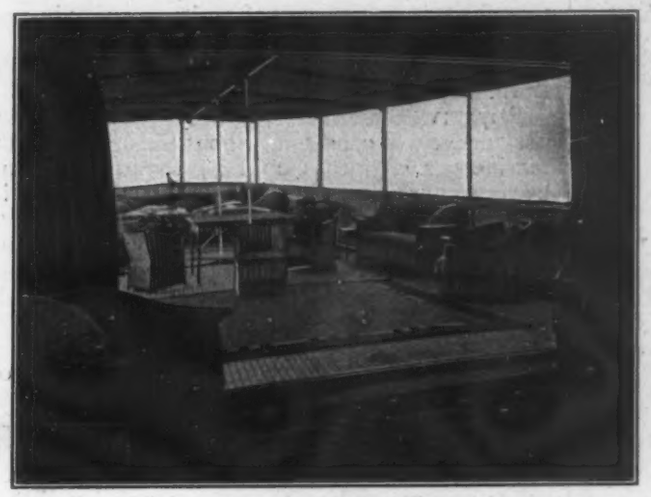
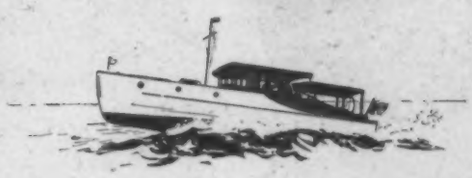


¶ A famous yacht most fittingly furnished with this type of outdoor furniture.



A deep, luxurious chair in Reed or Willow. Soft, downy cushions. The pocket for magazines and the receptacle for a glass are detachable. A sofa may be had to match this chair, in any length desired.

2133

2134

(Left) A most comfortable lounging arm chair, made of Reed with strikingly smart lines. It has broad, flat arms and a high back on which to rest the head. Decidedly, a chair to relax in! Down-filled cushions.

REED or Wand Willow is ideal as yacht furniture. It is light. It is airy. Yet it has most satisfactory durability. The designs have a simple tastefulness that is worthy of the best appointed craft. There are many models of easy chairs, chaises longues, armchairs, sofas, tables, stands. Barto, manufacturers and interior decorators, will gladly estimate on the entire furnishing of the yacht. Pieces may be made to order to fit any specifications, including odd corners and special spaces. We also make a complete line of upholstered furniture as well as cushions, draperies and bedding of the very highest quality, and the prices are moderate indeed.

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(Right) A "different" type of chair—for a lady or a gentleman. A model that's long on comfort.

2132

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An eggshell armchair in Wand Willow. Light, durable, easy to move around. Especially suitable for bridge and other deck parties.

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A side chair for decks, dining, and odd corners. This model is in Reed. Sturdily built and of graceful lines, with attractive pattern on back.

1015

This Reed armchair is a light, graceful piece and assures comfort. Note the interesting construction to the arms. Very durable and light to move around.

1019

A Reed armchair. It is very well built. Its pleasing design is appropriate to a well appointed yacht and very comfortable.

2135A

(Left) This is the latest style of new period furniture adapted from the French Wand Willow. Distinctive in design and very restful.

(Below) This sofa, of matching design to the chair above, gives a very smart effect heaped with pillows. Chairs and tables to match this chair and sofa may be had.

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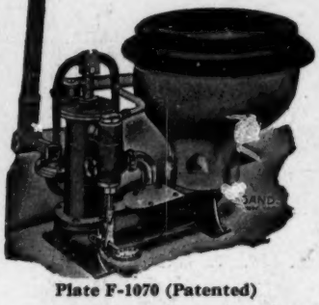

Plate F-1070 (Patented)

Plate F-582

Plate F-1070 — The "Frisco" pump water closet, oval vitro-adamant hopper bowl; **three-inch** (right hand) combined supply and waste pump; Sands patent automatic safety supply foot valve; Sands patent backwater check valve; all metal parts smoothed and bronze finish, with N. P. tubular handle; oak seat and cover.....**$95.00**

NOTE — This closet will be furnished regularly from stock with pump at right hand facing; left hand (as illustrated) where so specified. Designed for heavy duty. **Best fixture yet produced for the price.**

Plate F-582 — The "Madoc" 12" round front vitro-adamant lavatory with integral back, basin, and overflow. N. P. brass bulkhead screws and washers; N. P. brass compression faucet; N. P. brass chain and rubber stopper; 1¼" N. P. cast brass full "S" trap.....**$23.50**

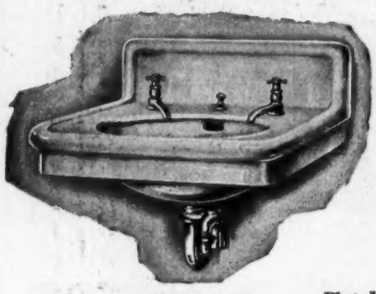

Plate F-567

Plate F-567 — The "Majestic" vitro-adamant lavatory with overlap slab, integral back, "Sanos" overflow, concealed hanger, enameled painted bulkhead supports, N. P. brass self-closing faucets with china indexes marked "Hot" and "Cold"; "Improvo" pop-up waste, N. P. cast brass full "S" swivel trap. Price.....**$51.00**

Plate F-407 (Open) (Copyright)

Plate F-407 — The "Sanwood" Folding Lavatory with vitro-adamant roll-rim basin with N. P. copper lining-china soap dish, and N. P. toothbrush holder. N. P. brass pump with combination swing supply faucet, N. P. hinged guard rail, N. P. brass towel rack, N. P. brass supply and waste couplings and trimmings. Polished quartered oak.....**$75.00**

Plate F-408 — As described with genuine mahogany.....**$80.00**

Plate F-1065 — The "Iowa" pump water closet, vitro-adamant oval hopper bowl, **four-inch** combined supply and waste pump; Sands patent automatic safety supply foot valve; Sands patent backwater check valve; pump rough, finished trimmings. Oak seat and cover. **$110.00**

Plate F-1066 — Same with pump, finished white and N. P. trimmings.....**$122.50**

Plate F-1065 (Patented)

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greater the per cent of slip, and the greater the likelihood of unpleasant vibration and its attendant ills.

ROTATIVE BALANCE: Proper and accurate rotative balance is a vital necessity for propellers at high or even medium speed. In combination with proper pitch balance, an accurately balanced propeller can be guaranteed not to cause undue vibration, except in rare instances.

In order to secure rotative balance the propeller is mounted on a shaft supported on sensitive ball bearings, when any slight excess of weight on any part of any of the blades will be evident. Material is then evenly ground from the crowning surface, until enough has been removed so that there is no showing of an irregularity in weight distribution at any point in its complete rotation. But correct rotative balance will not correct pitch irregularity. Both are absolutely essential.

ROTATIVE SPEED: In early days 300 to 400 revolutions per minute was considered about the usual speed at which marine gas engines should be operated. When engines became more carefully designed, speeds were increased with resulting additional power, until it was feared that propellers could not be designed which would be efficient at these higher speeds, and in many cases speed-reducing gears were added to insure a propeller speed of less than engine speed.

Today, however, propellers have been perfected, together with boats and engines, with propellers operating at speeds only a short time ago believed impracticable. In some cases speed-increasing rather than speed-reducing gears have been used to drive propellers at higher than engine speeds. In one instance, a direct-connected propeller was rotated at the almost unbelievable speed of 6,500 revolutions per minute, with a slip of but 20 per cent.

The design of propellers certainly not only has kept pace with the speeding up of the engine, but the present effective engine speeds would not have been made possible had not improved propeller design permitted.

FRICTIONAL RESISTANCE: The frictional resistance of a well-designed and properly manufactured propeller is not very great.

The principal points at which some resistance of necessity must exist, are in front of the hub, along the surfaces of the blades and hub, and in the rear of the hub, where a slight vortex will appear unless what is known as a fair-water is fitted to the shaft holding-nut.

The entering edge divides the water, and while the streamline of the water along the flat driving surface is but slightly disturbed, more or less disturbance occurs as it is pushed ahead in opening up the water, until the maximum thickness of the blade is reached, after which the pressure of the water down the incline to the thin trailing edge party neutralized the power lost in opening the water by the blades.

The above is true only providing the propeller is of true pitch and has proper pitch and rotative balance.

PROPELLER EFFECT: A propeller exerts a double effect in the propulsion of a boat, both drawing the water to it and pushing it astern, the reaction in turn forcing the boat ahead. In going astern the pushing effect is less than when going ahead, due to the crowning surface temporarily used for driving.

Bearing this in mind, it should be apparent that the less the disturbance created in the column of water acted upon by the propeller, the less will be the loss of power, the greater its efficiency and the less the slip.

PROPELLER SLIP: The slip of a propeller, always expressed as per cent slip, is the percentage of loss in speed. For instance, if a propeller of 20-inch pitch is driven at a speed of 1,000 revolutions per minute, if there is no slip the speed will be $20 \div 12 \times 1{,}000 \times 60 \div 5{,}280 = 18.98$ miles per hour. If the boat, over a measured course, makes 15.15 miles per hour, the slip is 3.788 miles, or

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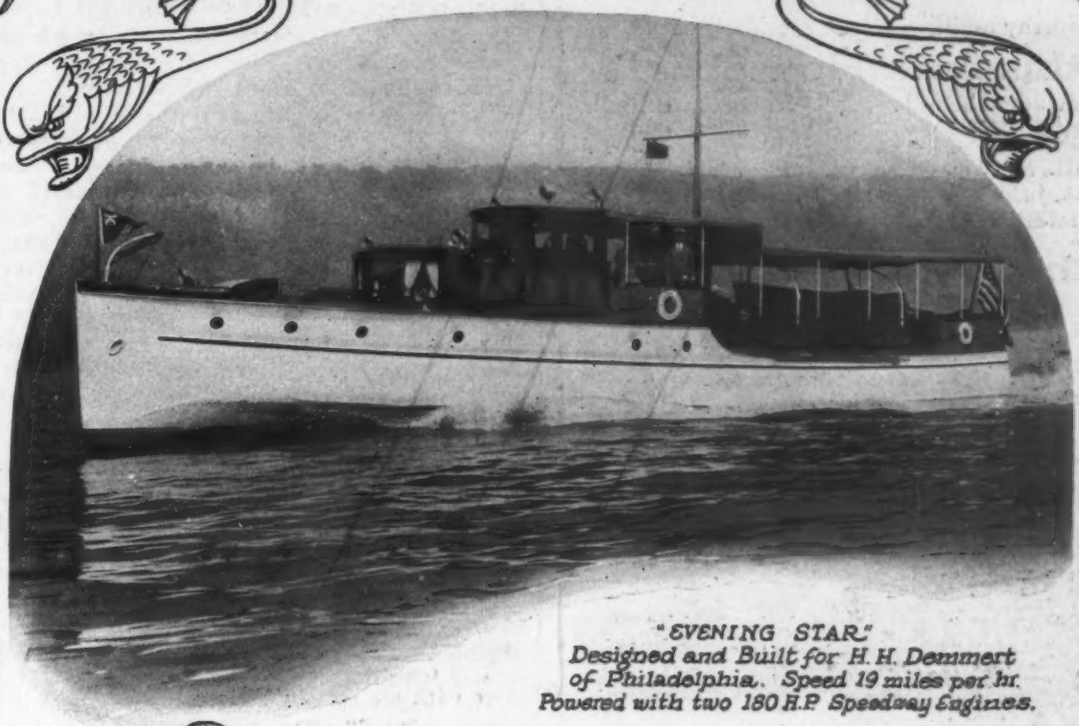

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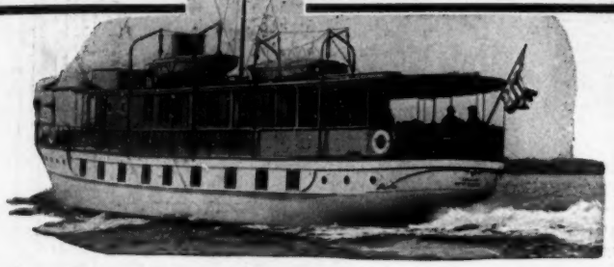

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approximately 20 per cent of 18.938 miles. The propeller is thus said to have 20 per cent slip.

A simple rule to find the distance in miles a propeller of given pitch should drive a boat at any number of revolutions per minute, with no slip, is as follows: Multiply the pitch in inches by the number of revolutions per minute, by .00947, and the result will be miles per hour.

Example: Pitch, 20 inches; speed, 1,000. Solution: $20 \times 1{,}000 \times .00947 = 18.94$ miles per hour.

Another simple rule: Multiply the pitch in inches by the revolutions per minute; move the decimal point three places to the left and deduct 5 per cent.

Example: Pitch, 20 inches; speed, 1,000. Solution: $20 \times 1{,}000 = 20{,}000$; move decimal point three places to left, 20,000; deduct 5 per cent, $20 - 1 = 19$ miles per hour.

The amount of slip may be as low as 15 per cent, or even less in a light built boat of easy lines, or it may run as high as 35 per cent, or even more in a heavy working boat, hard to drive and overpowered. However, the range from 20 to 30 per cent may be taken as pretty nearly normal.

It should be remembered that up to a certain speed boats can be driven comparatively easily, but when this limit is reached it requires greatly increased power to show much higher speed, the percentage of slip rapidly rising.

PROPELLER THRUST: The thrust of a propeller is against a cylindrical column of water of approximately the diameter of the propeller, the reaction driving the boat ahead.

It is a fact well known to experienced marine engineers that some propellers will turn up faster when moored to a wharf, or when impeded by a tow or in a heavy seaway, while others will show a material reduction in speed under similar conditions.

The rotative speed will increase if there is insufficient projected blade area, usually with a high pitch ratio, setting up a rotary, swirling or churning effect, or the propeller may not be sufficiently submerged to prevent what is known as cavitation, or drawing air from the surface to break the vacuum present at the front of the blades.

Decreased rotative speed should be expected if the contour of the blade is that of the type used for towboats or cargo craft, with the propeller sufficiently submerged to prevent cavitation.

Towboats ordinarily will travel but a little faster when running free than with a moderate tow, and the rotative speed will decrease as the weight and load is increased, but not proportionally. The fact that towboat propellers are well submerged and get solid water explains this effect.

There must be sufficient space between the blades for the water to pass freely, to prevent churning, hence one necessity for large diameter and low pitch ratio.

(*To be continued*)

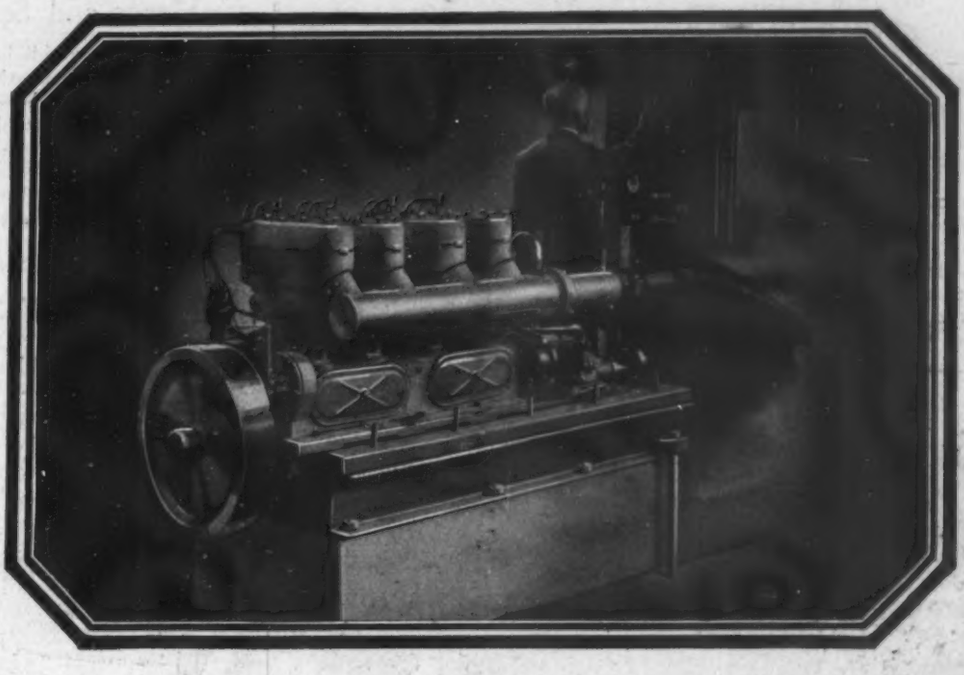
Claud Worth on "Salt Horse"

(*Continued from page 80*)

last long, and carrots, even when stored in sand, will not keep many weeks in hot weather. When there are no potatoes or carrots, wash a breakfast cupful of rice and use this instead. After boiling two hours add a tin of tomatoes and leave the stew on the stove long enough to heat the tomatoes through.

On an open sea cruise we always take a large variety of the best stores procurable. The only tinned (canned) stores in constant use are Californian fruit, tomatoes, milk and sardines. We occasionally use tinned spaghetti with tomato, or baked beans. We also carry for emergencies tinned beef and various fancy tinned "rations", but unless somebody cares to try a tin these are usually returned to store intact. The meals are more or less decided by the vote of all hands and the cook, and the result is that salt beef in some form or other is chosen for the meat course for dinner at least two days out of three.

Last summer, towards the end of our holiday, some friends from the shore dined on board *Tern IV*. The meat course was boiled beef which had been in the yacht to the Azores and back, and I believe everyone had a second helping. CLAUD WORTH.



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ZR1 — 1 cylinder	7 H.P.
ZR2 — 2 cylinder	18 H.P.
ZR3 — 3 cylinder	30 H.P.
ZR4 — 4 cylinder	40 H.P.
F2 — 2 cylinder	18 H.P.
F3 — 3 cylinder	25 H.P.
F4 — 4 cylinder	35 H.P.
F6 — 6 cylinder	50 H.P.
NK2 — 2 cylinder	25 H.P.
NK3 — 3 cylinder	35 H.P.
NK4 — 4 cylinder	50 H.P.
NK6 — 6 cylinder	80 H.P.
VH — 4 cylinder	14 H.P.
VHL — 4 cylinder	20 H.P.
Little Huskie, 4 cylinder	15 H.P.

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"You didn't come
a day too soon"
The sure way to avoid trouble in your mouth is to see your dentist in time. Go to him at least twice a year as a sensible precaution. He will keep teeth and gums healthy and may prevent serious trouble.

4 out of 5
see him too late

Don't let carelessness or a false feeling of security give dangerous pyorrhea a chance to fasten itself in your mouth. Four out of five have this dread infection at forty, and many younger, according to dental statistics.

A little foresight will keep you among the fortunate who escape. At least every six months let your dentist go over your mouth carefully to detect signs of gum infection and start now to brush night and morning with Forhan's for the Gums.

The entire family should brush with Forhan's. It's a pleasant tasting dentifrice that firms the gums and keeps them pink and healthy. It gives the teeth a thorough cleansing and keeps them white and clean.

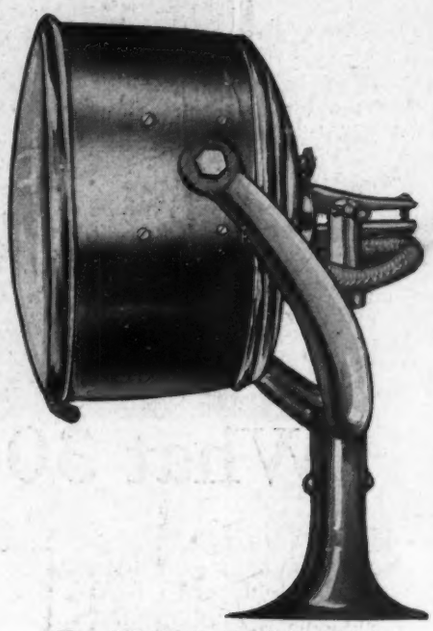
You can't begin using Forhan's too soon. Delay may exact a heavy toll. It's unwise to take chances with pyorrhea. Get your tube of Forhan's today. All druggists: 35c and 60c in tubes.

Formula of R. J. Forhan, D.D.S. · · · Forhan Company, New York

Forhan's
FOR THE GUMS
MORE THAN A TOOTH PASTE · · *IT CHECKS PYORRHEA*

Horns and Searchlights

Horns and searchlights will be found in profusion at the booth of the Portable Light Co., of 12 Warren Street, New York, on the mezzanine floor. Among these will be the One-Mile-Ray Searchlights, Half-Mile-Ray Searchlights, Sireno Signal Horns, Northeast Signal Horns, a new drum type searchlight, and a new Northeast horn.



New "Half-Mile-Ray" Searchlight

Lathrop Shows a New Mystic Model

Lathrop Marine Engines are exhibited at the Motor Boat Show by the New York dealers, Verrier, Eddy Company.

The models and sizes of engines exhibited are as follows:

16 h.p. Two-Cylinder, Four-Cycle; 40 h.p. Four-Cylinder, Four-Cycle; 65 h.p. Six-Cylinder, Four-Cycle; and 100 h.p. Six-Cylinder, Four-Cycle, all Standard models.

The new model "Mystic" Engine is also exhibited for the first time, together with a "split" model showing the internal, or working parts.

A. M. F. Pumps

The American Machine & Foundry Co., Brooklyn, N. Y., exhibit a line of that most important item of boat equipment—pumps. Most of these are electric driven. A special rotary pump for every type of boat will be one of the features of the A. M. F. exhibit, in space 66 on the third floor.

The working member is a cylindrical rotor rigidly secured to the shaft, having cam faces opposite each other, separated by stationary partitions. As the shaft rotates, the liquid is simultaneously sucked in and expelled as the high points of the cam faces the ports. There are two of these impulses per revolution, which, together with the high driving speed, assures a non-pulsating discharge. The pump is vibrationless and noiseless in spite of its high speed.

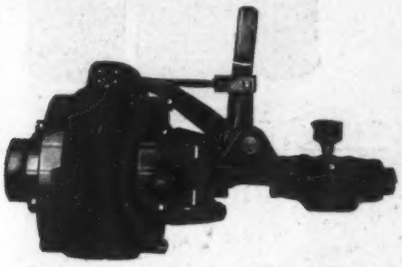
Joe's Reverse Gear

The Snow and Petrelli Company, of New Haven, Conn., makers of the familiar Joe's Reverse Gears, show their latest model reversing gears and clutches in booth 56, on the third floor of the Show.

One will find there "Old Man Joe's" new gear with its 88% reverse and patented double clutch direct drive, which has been tested and adapted by a number of the best small motor manufacturers in this country.

"Old Man Joe" will also show the famous speed gears which have year after year won the first three or four places in the Gold Cup races, the 150-mile Sweepstakes, the Dodge Memorial Trophy race, and the International Harmsworth Trophy races. These gears have broken one worlds record after another. Then there are heavy duty gears, the famous Dry Disc clutches, and a full line of the Hartmann Universal Joints.

Here, also, one may obtain one of "Old Man Joe's" famous Rules of the Road calendar.



Latest model of Joe's Reverse Gear.

Topping Bros. for Marine Hardware and Fittings

To get a line on the latest and best marine hardware and fittings of all kinds the showgoer should not fail to visit the booth of Topping Bros., on the third floor. Besides many varieties of blocks, turnbuckles, wire rigging, and all kinds of fittings for both sail and motor boats, they will exhibit one of the famous Fairhaven Mushroom Anchors, for which they are distributors, and which they carry in stock in weights from 50 to 1250 pounds.

R. W. Zundel Co., Inc.

R. W. Zundel Co., marine hardware dealers of New York City, will show a large variety of accessories at Space 73, third floor. Included in their exhibit will be plumbing fixtures, ship's clocks, barometers, compasses, galley stoves, Blood universal joints, cabin lights, sailing lights, dome lights, galvanized and brass marine hardware, etc. In addition they will show for the first time a new automatic electric bilge pump, a highly desirable article at a price within reach of the majority of boat owners.

Eisemann Magnetos

The Eisemann Magneto Corp., will occupy spaces 45 and 46 at the Show. A complete line of magnetos for from one to six cylinders, will be exhibited. These devices will be shown with a special rust-proof finish which counteracts the effects of salt air and water.

You'll never know till *you* try it

A good many old-fashioned persons think these advertisements are published merely to promote the sale of Barbasol.

They have a far nobler purpose.

What we are really trying to do is to help millions of our fellow men get out of a rut.

Barbasol will lift you out of the shaving past and send you singing to success!

1 — Wash the face
(but leave it wet)

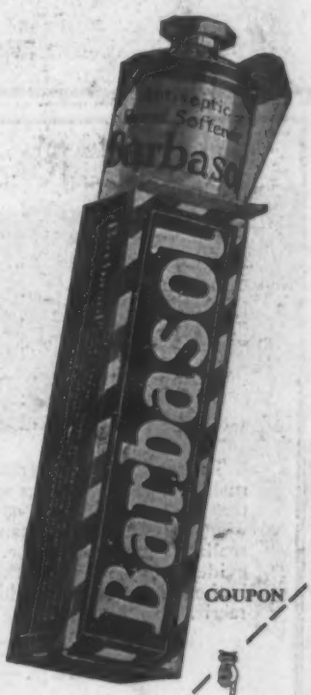
2 — Spread on Barbasol
(but don't rub in)

3 — Shave

N. B. — No brush. Also n. r. i. — no rub-in. The full-bodied creamy Barbasol holds every hair straight up against the reaper, and swish, swish — how nice you look this morning!

Barbasol leaves the natural oils right in the skin — takes nothing away but the whiskers.

Select a dime from your small change pocket, fill out the coupon and mail it to us, and we send you the generous trial tube. Use Barbasol 3 times according to directions. Then you'll know why Barbasol's the Modern Way of Shaving.



Barbasol

For Modern Shaving

COUPON

The Barbasol Co.
Indianapolis, Ind.

I enclose 10c. Please send trial tube and I'll give it a fair trial.

Name.....

Address.....

Y-2-27